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GERMANY

GERMANY

AN INTRODUCTORY STUDY
IN PHYSICAL AND HUMAN
GEOGRAPHY

BY

JASPER H. STEMBRIDGE

*Approved by the Sub-Committee for Publications of
the Standing Committee for Geography in Public Schools*



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PREFACE TO THE SECOND EDITION

THIS book was completed shortly before the present National Socialist (Nazi) régime came into power in Germany. Under this rule individual liberty has been suppressed in the interests of an all-powerful state. A centralized government has been established and the former Federal States reduced to mere administrative units.

As a result of a plébiscite the rich Saar Coal Basin was returned to Germany in March, 1935. Military conscription was introduced about the same time, and the demilitarized area of the Rhineland was reoccupied by Germany in March, 1936.

But greatest of all changes which have taken place was that effected in March, 1938, when, following a period of tension between Germany and Austria, German troops marched into the latter country, which was immediately incorporated in the Reich, and Vienna was reduced to the status of a mere provincial capital. The addition of Austria gave Germany some 82,000 square miles of territory, which more than compensated her for her losses in the First Great War, as well as valuable forest resources, iron ore, and hydro-electric power, while it increased her population by nearly seven millions. Moreover within the German frontiers now lay considerable portions of the Alps, the whole of the Alpine Foreland and also the fertile Vienna Basin.

In October, 1938, as a result of the Four Power Conference

(Great Britain, France, Germany and Italy) held at Munich on 29th September, Germany occupied the Sudeten districts of Czechoslovakia, thus acquiring some 11,000 square miles of territory with a population of 3,600,000. In the following March Germany seized the rest of Czechoslovakia: Bohemia and Moravia became a Protectorate of the Reich; and Slovakia, a nominally independent republic, whose frontiers Hitler promised to protect; while Ruthenia was invaded and annexed by Hungary; and the Teschen industrial area was transferred to Poland.

Meanwhile, yielding to an ultimatum, Lithuania surrendered in March, 1939, the port of Memel and the adjacent Memel territory to Germany, and so lost her only seaport and outlet to the Baltic.

On 1st September, 1939, Germany plunged Europe into war by her invasion of Poland, whose independence had been guaranteed by Britain and France.

But in spite of alterations in the political aspects of this book, fundamentally there is no essential change in the physical and human geography of Germany. Rather do recent events serve to show that, while the character of a nation is deeply influenced by environment, yet from time to time some outstanding figure, marching across the world-stage, may profoundly alter its history.

OXFORD,
November 1941.

J. H. S.

FOREWORD

THE writing of this book was undertaken at the request of some of my colleagues on the Publications Sub-Committee of the Standing Committee for Geography in Public Schools.

The aim has been to show how man has been influenced by his environment and to use the facts of physical relief, structure and climate to explain human geography.

Much of the work was done when preparing boys at Denstone College for the School and Higher Certificate Examinations in Geography. Some of the field-work was carried out in Germany with small parties of boys from the same school.

It is hoped that the book will prove not only useful to pupils preparing for the School and Higher Certificate Examinations, but may also form a preliminary study for students in their earlier stages at the Universities.

A number of sketch-maps are included. They are intended to illustrate special points and in no way to supersede the use of a good atlas.

My thanks are due to Dr. E. D. Laborde for his constant encouragement and help; and also to the following for their advice and suggestions:—Mr. E. H. Carter, O.B.E., Miss E. Fisk, Mr. D. H. Lawton, Mr. T. Lewis, Mr. W. MacPherson, Mr. J. Page, Mr. C. W. Prosser, Mr. H. A. Roach, Professor W. W. Watts and Dr. S. Weitzman. I am, however, responsible for such shortcomings as

remain. I am also indebted to Herr O. Mann, of the German State Railways, to the Publicity Director of Coblenz, and to Mr. D. F. Wood for their assistance in collecting the photos; and to the University of London Press for allowing me to use Figures 8 and 9 from *A Geography of Western Europe*.

September, 1982.

J. H. S.

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PART I

GERMANY

CHAPTER I

GERMANY AFTER THE GREAT WAR

1. POSITION AND EXTENT

GERMANY lies in the very heart of Europe. In 1914 the area of the Empire was slightly greater than that of France, but its population was about 65 millions as compared with some 40 millions in the latter country. At the present time the area of Germany is 181,720 square miles with a population of 68 millions, and that of France is 212,659 square miles, with some 42 million inhabitants.

The Germanic influence, however, extends far beyond the present political boundaries, for in addition to Austria, which is Teutonic both in race, speech and sympathy, some 16 per cent. of the people of Czechošlovakia are Germans, and there are also considerable German settlements in Switzerland, Hungary and Rumania, as well as in Alsace-Lorraine, Poland and along the Baltic coast of the Republics of Lithuania, Latvia and Estonia.

2. THE FRONTIERS

Through her central position Germany is in touch with other cultures, some closely resembling her own, and others which, though differing widely in outlook, have had an undoubted influence on German thought, literature and art. This encirclement by other states has, however, some very obvious disadvantages. There are indeed few

other European countries bordered by so many foreign neighbours. Two-thirds of the boundaries of Germany are land boundaries, and even on the north the Peninsula of Jutland, the northern part of which belongs to Denmark, and the Polish Corridor, break the continuity of the coast-line. East of the Corridor the now detached province of East Prussia is surrounded on three sides by alien lands—on the south and west by Poland, on the east by Lithuania.

The Polish-German frontier is ill-defined. Here Slav and Teuton intermingle, and there are on the German side of the line colonies of Poles and on the Polish side a still larger number of German settlements : since early times Slavonic tribes have advanced westwards across the plain and then receded again before the pressure of their virile Teuton neighbours, and it would indeed surpass the wit of man to devise a boundary line satisfactory to both peoples. The pre-war frontier between German and Russian Poland followed the river Prosna to its confluence with the Warta. It then ran north-east to the junction of the Vistula and its tributary the Drewenz, after which it followed the latter river for some distance, until it swung eastward to join the present southern boundary of East Prussia. The present frontier between Poland and Germany runs from the Polish town of Ratibor, first north-east for a short distance, and then north, keeping to the east of and roughly parallel to the Oder. At the confluence of the Drage and the Netze it turns east along the latter river and then, leaving it, runs north across a sparsely peopled heath and moorland area until it reaches the Baltic coast. Thus the post-war boundary lies much nearer the Oder than did the former frontier : Berlin itself is but 116 miles distant from Poland, and the Prussian province of Silesia is bordered on three sides by Polish and Czechoslovakian territory.

The boundary between Germany and Czechoslovakia follows the crest of the Sudetes and the Riesen Gebirge, and continues south-south-west along the wooded Erz Gebirge. It then runs south-south-east, following the crests of the Bohemian Forest Range, until it reaches the great waterway of the Danube which forms the frontier as far as Passau. From the latter town the line is demarcated by the Inn and its tributary the Salzach as far as the Austrian town of Salzburg, whence the boundary goes along the crest of the Berchtesgaden Alps. Thence it runs westward along the Northern Alps to Bregenz on Lake Constance, and crosses the lake to the town of Constance. It then follows the Rhine to Basle, except where the Swiss Canton of Schaffhausen extends north of the Rhine. The famous falls, an important source of hydro-electric power, are in Switzerland.

This southern boundary from Passau to Basle is, of all Germany's frontiers, the best defined, and it is in this region that the inhabitants on both sides of the line are German in speech and for the most part in sympathy. The Rhine forms the dividing line between France and Germany from Basle to a point on the river south-west of Karlsruhe. The frontier then runs west to the south-west corner of the Duchy of Luxembourg. Thence the boundary line with this State, and, farther north, with Belgium, crosses the upland regions of the Eifel and the Ardennes as far as Aachen, whence it traverses the plain, running roughly parallel to the Maas. Next, crossing the Rhine the frontier runs parallel to the Ems. Here, where the confines of Germany march with Holland, the boundary crosses the vast Bourtanger moor and then traverses the estuary of the Ems; thence running west of the island of Borkum in the Frisian group.

8. THE STATES OF GERMANY

The varied topography of Germany is reflected in its many political divisions. It is only on the Northern Plain that one really large state, Prussia, has sprung into being. This State, by far the largest in Germany, spreads from west to east across the plain and extends, in places, from the coast to the foothills of the Central Uplands. In some districts it has even thrust its territories up the river valleys : a portion of Prussia stretches along the Weser and Fulda and thence down the Main to Frankfurt. Bavaria, whose area is somewhat over a quarter of that of Prussia, is crossed by the upper Danube ; Würtemberg, the third state of Germany, has extended its boundaries up the tributaries of the Neckar, and thence across the upper Danube to the shores of Lake Constance.

At the present time there are seventeen different states including the Free Cities of Hamburg, Bremen and Lübeck, but the divisions of these states are extremely complex, for most of them own one or more *enclaves* that lie scattered about the country. The original territory of the Hohenzollerns is in the middle of Würtemberg. Oldenburg lies around the river Hunte, but one of its detached portions is situated round the middle Nahe, amidst the uplands of the Hunsrück ; and north-west of the Free City of Lübeck there is another *enclave* belonging to the same state. A portion of the Saar basin belongs to Bavaria and another portion to Prussia.

The number of these territories within the State has, however, been greatly reduced, for when the German Empire was founded in 1871 it consisted of twenty-six states united under the King of Prussia, who became the first German Emperor. A Customs Union embracing most of the states had, however, existed for a considerable

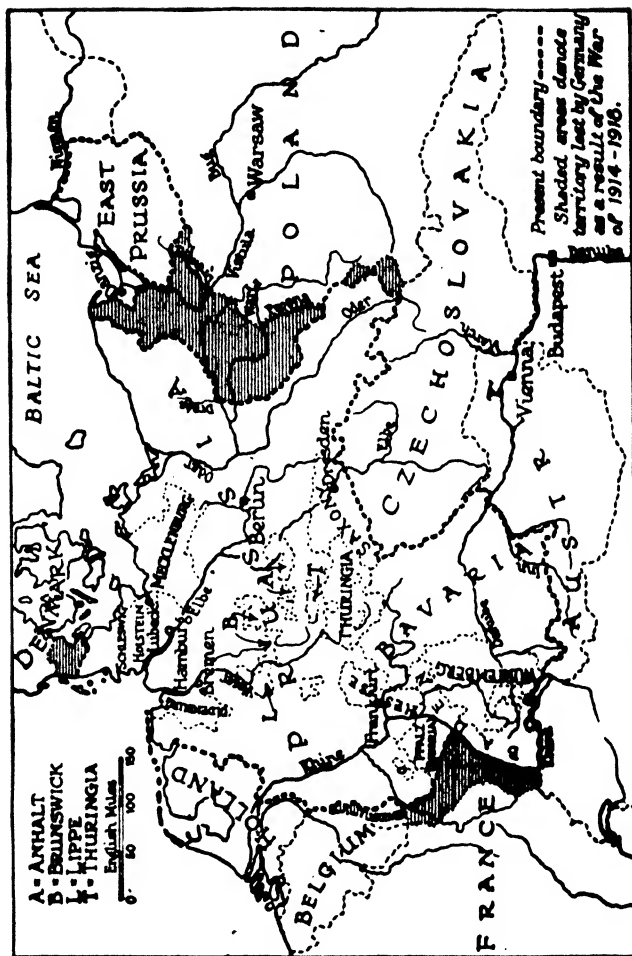


FIG. 1. POLITICAL MAP OF GERMANY

time and it undoubtedly played an important part in the foundation of the Confederation. This Union began in 1819 when the internal customs dues were abolished within the boundaries of Prussia. Later a similar union took place between Bavaria and Württemberg and ultimately this Customs Union joined that of Prussia. As years went by, other states gradually fell into line, though it was not until 1906 that an Economic Union, embracing all the states in the Empire, became an accomplished fact.

In November 1918, on the abdication of the Emperor, Germany became a Republic. The constitution, which was promulgated on August 11th, 1919, provided for a Central Government with local legislatures for the different states of the Reich. Foreign relations and defence, customs dues, taxation and the control of the railways were all reserved to the Central Government. It was further laid down that the government of each separate state must be of the Republican type.

The Treaty of Versailles abolished the right of individual states to have their own armies and established one national force in which enlistment is for a minimum period of twelve years.

4. TERRITORIAL LOSSES DUE TO THE WAR

As a result of her defeat in the Great War, Germany has actually lost somewhat over 27,000 square miles of European territory with a total population of about 6½ millions. Some idea of what this means may be gathered from a comparison with Scotland, whose total area is just over 80,000 square miles. Germany also forfeited her entire colonial possessions, whose area exceeded a million square miles, with a population of some 12 millions.

By the return of Alsace-Lorraine to France, Germany lost some 5,600 square miles and 1,700,000 people. This

region comprised not only rich agricultural lands, but valuable industrial areas with vast deposits of iron-ore, coal and potash. In addition to Strasbourg and Metz, the important cotton manufacturing towns of Mulhouse (Mühlhausen) and Colmar were transferred to France. The coal mines of the Saar Basin became the property of the French Government, and the ultimate fate of this area is to be decided by a plebiscite in 1935. In the Jutland Peninsula, the northern part of Schleswig-Holstein, with an area of some 1,500 square miles (and containing much rich dairy land) was handed over to Denmark. On her eastern border more than 17,800 square miles, with a population of 8,800,000, have been ceded to Poland. The most valuable portion of the latter is Upper Silesia, where 1,241 square miles, having a population of about three-quarters of a million, were placed under Polish rule, contrary to the wishes of the inhabitants, as shown by a plebiscite. Danzig became a free city under the rule of the League of Nations, but formed part of the Polish Customs Union ; and the port of Memel was ultimately included in Lithuania. In addition, some 400 square miles to the west of Aachen (Aix-la-Chapelle) were ceded to Belgium ; and about 120 square miles to Czechoslovakia.

CHAPTER II

THE STRUCTURE OF GERMANY

TOWARDS the end of the period that geologists call Palaeozoic or Primary there arose across Europe a vast chain of mountains to which has been given the name of the Hercynian system. North of this system stretched a great plain which was formed by the gradual uplifting of the sea-floor. To-day this plain spreads from Northern France through the Netherlands, Northern Germany and Poland into Russia.

Slowly the surface of the Hercynian chain became worn down and planed away by denuding forces, and during the Mesozoic era much had sunk below sea level while the granites, slates, gneisses and other rocks of which it was composed were buried beneath fresh marine formations. During the latter part of the Mesozoic period this great land mass emerged above the surface of the waters.

Then in Tertiary times fresh mountain building movements took place and the Pyrenees, the Alps and the Jura were formed, being thrown in great upfolds against the blocks of the Hercynian Chain. In the course of these orogenic movements portions of the latter mountains, in many cases worn down to a peneplain, were depressed, while others were uplifted, forming block mountains of which fragments still remain.

These blocks, extending through the south-west of Europe, can be traced from the plateau of Spain to the Central Highlands of France. West of the depression that

forms the Paris basin lie the Highlands of Brittany, while across the waters of the English Channel are the Uplands of Cornwall and Devon and farther to the west those of South-west Ireland. East of the Rhine the Palaeozoic rocks of the Ardennes peneplain are continued through the Uplands of Nassau and Westphalia. In the valley which the Meuse has cut through the Ardennes traces of the upfolds of this portion of the Hercynian Chain may still be seen. East of the present Rhine Valley the Odenwald, the Thüringer Wald, the Fichtel Gebirge, the Uplands of Bavaria and the Bohemian Diamond, and the more northerly Harz Mountains are all much denuded remains of this great mass. The mountain knot of the Fichtel Gebirge contains such Palaeozoic rocks as granites and gneisses of Archaean age as well as slates of the Cambrian system. Many of the peaks that rise sharply above the high plateaus show strangely eroded forms: some of the granite summits have been carved into curious shapes that have been left standing while surrounding softer strata have been worn away.

During the tectonic changes of the Tertiary period some of the coal-bearing rocks were greatly depressed and buried beneath subsequent strata, while in other regions, such as the Ruhr, Saxony and Silesia, they were raised and, at the present time, form rich coal basins.

It was during this period of uplift that the crest of the region that now forms the Rift Valley of the Rhine became weakened; then, when the great Tertiary earth changes occurred, this weakened crest subsided and thus produced the present valley. On the west the block mountains of the Vosges, with their granites, limestones, sandstones and other rocks of varying ages, rise above the flat valley floor, while facing them, on the opposite side

of the valley, are the corresponding uplands of the Black Forest. Between them stretches the broad Rhine plain covered with the more recent alluvial gravels and sands. North of the river Neckar the Odenwald forms the eastern boundary of the valley. Towards the west of these

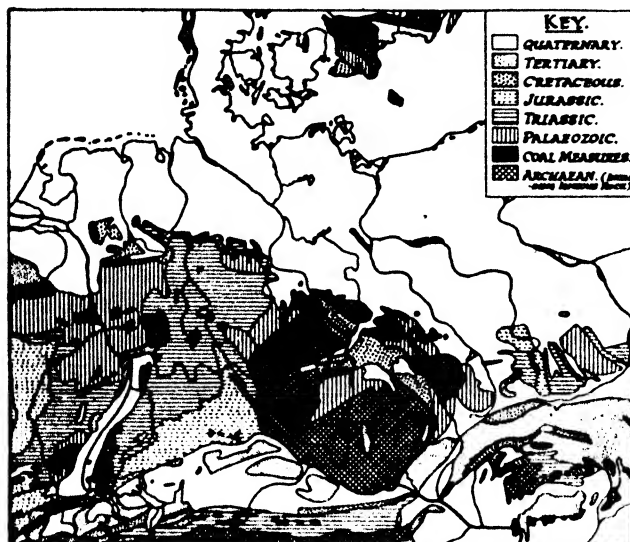


FIG. 2. SIMPLIFIED GEOLOGICAL MAP OF CENTRAL EUROPE

uplands granite and other crystalline rocks rise steeply from the valleys of the Rhine and the Main, but in the east masses of volcanic rocks can be seen standing above the surrounding sandstones.

If we were to follow the Rhône valley up to Lake Geneva and then travel north-eastwards along the valley of the Aar to Lake Constance, and thence down the Danube to a point somewhat south of the town of Linz in Austria, we should pass through a great hollow. This

hollow is bounded on the south by the Alps, on the north-west by the Jura and on the north by the Swabian and Franconian Jura. In Miocene times this trough formed part of a great sea. Gradually, however, the floor of this sea rose and the waters receded leaving a string of lakes upon its former bed. The glaciers of the Ice Age covered the marine deposits with gravels, sands and loams. Many of

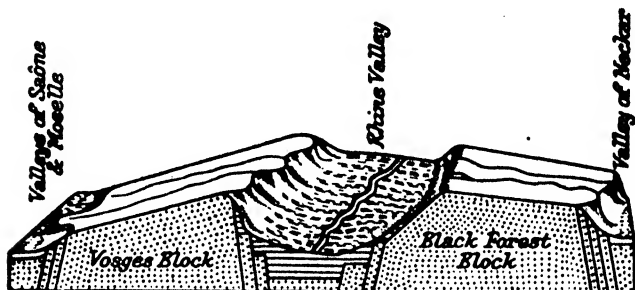


FIG. 3. BLOCK DIAGRAM SHOWING THE STRUCTURE OF THE RHINE VALLEY

The section is taken across the valley near Colmar and shows the valley as a rift between two blocks.

these glaciers followed the course of the pre-glacial valleys, overdeepened them and formed the U-shaped valleys so typical of glaciated regions. At the time when the work of ice was at its maximum some of the glaciers overflowed into adjoining valleys. For example, the one which occupies the present valley of the Inn overrode its watershed and sent a tongue of ice into the Isar valley. At a later date this ice receded, but it left the Seefeld Pass behind as evidence of its former path. The Fern Pass leading from the Inn to the Loisach valley was formed in a similar way.

Later the glaciers retreated still farther and left, spread over what is now the Alpine Foreland, morainic

deposits and in addition the great erratic blocks with which this portion of the Upper Danube valley is strewn. These blocks, so different from the surrounding strata, could only have been transported to their present position by such powerful agents as glaciers. The post-glacial streams also added their débris to the glacial drift and thus a large part of Bavaria is now covered with these alluvial and glacial deposits. These deposits include not only limestones from the Bavarian Alps, but also granites, slates and gneisses which have been carried down from the Southern Alps. The long, narrow lakes, above whose waters rise steep mountain walls, have been formed in part by the action of glaciers and in part by the action of water. Geologists, however, differ in opinion as to which of these denuding agents has played the more prominent part.

These enormous glaciers of the Ice Age did much to modify the landscape of the Alps. Their highest summits at the present time are those whose hard, resistant and (as a rule) older rocks have been able to withstand prolonged denudation. The Berchtesgaden Alps, lying south of Salzburg, between the valleys of the Salzach and the Saalach, still present a very complicated structure and, consequently, this outlying portion of Bavaria is isolated from the neighbouring regions. It is connected with them by passes, of which those leading towards Salzburg alone provide easy routes.

Hard grey limestone is the prevailing rock in the Bavarian Alps. Its jointed structure, dry valleys, fantastic peaks and water-formed caves present typical features of the *Karst* type. North of the Danube the broken edges of the limestone Swabian Jura bound the valley, while along the steeper north-west slopes of this range the Neckar flows north-east before turning north-

wards. Like the Rhine itself, the Neckar has captured rivers that once poured their waters into the Danube, and has tapped the upper portions of streams once tributary to this river. The connecting valleys so formed now provide ways giving easy access from one river basin to another. Sandstones and marls are the chief rocks of the Neckar Valley. Where the former rocks occur the river speeds through narrow gorges bounded by flat-topped rocks, but where the stream traverses the marl the valley broadens.

The line of the Swabian Jura is continued northwards by the Franconian Jura, and eastwards lies the basin drained by the southward flowing Naab, and westward that of the northward flowing Main. This region has a complicated geological structure, with mixtures of Triassic sandstones and older granites that have, in places, weathered to form kaolin. To the north of the Bavarian Alps, which are largely composed of crystalline rocks, the Regen first flows from east to west in a longitudinal valley and then runs in a transverse valley across the western end of this range until it reaches the Danube. In the Bavarian Forest prolonged denudation has exposed underlying quartz and granite which now crown the summits of such peaks as the Arber (4,710 ft.).

To the north-west the sheltered basin of Thuringia, lying between the Thüringer Wald and the Harz, is bedded with Triassic Keuper marl broken, here and there, by sandstone and limestone hills. These deposits of Keuper marl and sandstone have, however, been worn away on the more exposed slopes of the Thüringer Wald and the Harz.

East of the Erz Gebirge the Elbe breaks through sandstone ridges to the plain, while the parallel chains of the Sudetes run from the granite Riesen Gebirge in a

south-easterly direction. The former uplands consist, in the main, of two parallel ridges of which the easterly one, with its slates, gneiss and igneous rocks, rises sharply above the Silesian plain.

The Tertiary earth storm was also the beginning of a period of great volcanic activity that lasted into the Quaternary era. In Germany evidence of this activity remains in such districts as the Eifel and in the basaltic lava flows of the Volgesberg and the Rhön Gebirge. The volcanoes of the Eifel are, with one exception, the only ones in Germany that have preserved their craters intact. Many of these craters are filled with lakes, while the lava flows, scoriac and sheets of pumice (that here stretch along both banks of the Rhine) all bear testimony to past volcanic activity. One of the most remarkable lakes in the Eifel is Laach occupying a basin formed by some volcanic explosion : this depression is probably not an actual crater, but there are numerous small craters in its vicinity. In the Rhön Gebirge some of the summits are formed of sheets of basalt, while in the central part of the area igneous rocks have been erupted through the older limestones and sandstones. The sides of the larger single cone of the Volgesberg are seamed with valleys.

All these volcanic districts display a complicated structure : in some parts the volcanic rocks have been worn away, exposing the underlying sandstones and limestones, but in many districts volcanic peaks tower above the flat sandstones or limestone ridges.

At the end of the Tertiary period the sea still covered the plain of northern Germany and the present edge of the Central Uplands formed a coastline—a coastline cut by wide bays whose outline can still be traced in such areas as those that centre about the towns of Cologne, Halle, Leipzig and Breslau. But slowly the surface of

PLATE I



THE LAACHER SEE AT ANDERNACH



THE KURISCHE NEHRUNG

The *haff* was probably formed by an encroachment of the sea due to the sinking of the coastline: the *nehrung* is a spit of land caused by the westerly winds. (See p. 20.)

the land rose above the Tertiary sea and what is now the great European plain, of which the German portion forms an important part, emerged above the waters.

The scene changed. Slowly, again, there advanced southwards from Scandinavia the great Quaternary ice sheet. On the west it reached the mouth of the Rhine while eastwards it stretched as far as the Vistula. At the same time there advanced from the Alpine regions those glaciers to whose work reference has already been made. Some of these glaciers travelled north across the plain, and ultimately both they and the Scandinavian ice sheet left behind them clays, sands, boulders and other morainic material. On the Northern Plain much of this glacial debris was deposited in the form of the comparatively low ridges that are so prominent a feature of this part of Germany. The melting waters of the ice sheet scoured channels through the remaining clays, sands and gravel, altering, in many cases, the courses of the pre-glacial streams and the direction of the valleys.

The ice sheet from the north and the great glaciers that advanced from the south did not meet and between them there remained a strip of varying width. This belt stretches from Picardy eastwards, across the southern portion of the German plain, and thence through Poland into Russia. Thus it was not covered with glacial drift, but its underlying rocks, laid down on the bed of the Tertiary sea, became covered with sheets of fine loess that was, in all probability, windborn. This loess belt forms to-day one of the finest agricultural regions in Europe.

At the conclusion of the Ice Age the Rift Valley of the Rhine sloped towards the south and through this southward valley waters flowed, by way of the channel now traversed by the Doubs, into the Rhône. Subsequently the Rift Valley became tilted towards the north,

with the result that the Rhine waters no longer poured into the Rhône, though the gap through which they flowed still remains and is known as the Burgundian Gate. The northward flowing Rhine now sent its waters towards the valley of a river already cutting its way towards the south. To the north of the Rift Valley a river, flowing towards the present site of Cologne, was already cutting back its valley to the south. Subsequently the Rhine flowed into this gorge which now extends from Bingen to Bonn. There are, however, remains of river terraces at an elevation of 550 feet above the bed of the present stream. Their presence shows that a gradual elevation of the land, probably with intervening quiescent periods, took place during the time that the Rhine was cutting still deeper this portion of its course.

This gradual rise probably extended through much of the present Central Highlands, since at the present time many of the rivers in this area flow, for at least a part of their courses, in a direction contrary to the general elevation of the land. Thus the middle Main flows between uplands which are now of less elevation than those across which the stream cut its lower course on its way to the Rhine.

The coasts of the North German Plain are of the type usually known as *neutral*: the land dips gently beneath the shallow waters of the sea and its orientation is independent of the structure of the rocks of which the surface is composed. Running parallel to the North Sea coast are the low sandy Frisian Islands, cut off from the land by the eroding action of the sea. These islands may be regarded as a continuation of the dunes of Holland, and the narrow strip of sea now separating them from the mainland may be looked upon as corresponding to the shallow lakes, known as *watten*, that lie behind the Dutch dunes.

But round the estuaries fresh land has been formed. The sediment brought down by the streams, together with innumerable marine organisms also deposited there, has served to create a fertile soil, and this process is still taking place. As the banks emerge above the water they become covered with saline plants which thus help to built them up and give them stability and then, by the aid of embankments and drainage, the land is reclaimed from the sea. This strip is succeeded by the *geest* that consists of sandy stony soils spread over the land by the melting of the Ice Sheet. The *geest* type is most extensive in the Luneburg Heath, lying between the lower Elbe and the Aller. Here, amidst sands and gravels, are the great erratics, the majority of which have travelled from Scandinavia.

East of the Peninsula of Jutland, three distinct lines of ridges form west to east semicircles concentric to the Baltic coast and, between these upland belts, lie broad valleys. These hills, formed of morainic material, probably mark the successive stages in the retreat of the Ice Sheet. Between the ridges lie broad depressions: the surface of some of them is covered with sand, but in others there are rich alluvial deposits. In certain districts erratics of Scandinavian origin are numerous, and they are not only found upon the surface, but also occur at considerable depths.

There are many lakes in northern Germany, especially in Mecklenburg in the west and in the Baltic Lake Plateau area of East Prussia. They occur in hollows in the surface, and while some are of considerable depths, others are shallow. Many of the latter have become filled by alluvial deposits and form marshes and peat bogs, such as the extensive Large Trodel to the east of Bromberg.

These lakes must not, however, be confused with the

shallow salt lakes which lie immediately behind the sand dunes of the Pomeranian coast. The latter lakes are of similar formation to the shallow lagoons which are called *haffe* and have direct access to the sea. The shallow Frisches Haff, between Königsberg and Danzig, and the Kurisches Haff, between the former town and Memel, are almost enclosed by long sand spits, called *nehrungs*. These have been formed by blown sand and the eastward drift of the Baltic currents. The Baltic coast, except in such regions as Samland, is flat, though it presents a somewhat more cliff-like appearance than the North Sea coast of Germany. In parts sinking has taken place. Through this cause the island of Rügen has become detached from the mainland. Rügen has an interesting geological structure, for the rocks of which it is composed resemble those of the districts of Scania and Seeland in Southern Sweden. The steep chalk cliffs along the eastern shore of the island are intersected by deep valleys, but inland the chalk is largely covered with morainic deposits and the surface is strewn with erratics.

The Schleswig-Holstein coast deserves special mention. It is low and flat and is cut by long, winding, narrow, branched openings known as *fohrden* that penetrate far inland. The longer *fohrden* are as much as 25 miles in length and the smaller ones attain a length of about 8 miles.

CHAPTER III

THE RELIEF OF GERMANY

1. THE ALPS, THE ALPINE FORELAND AND THE CENTRAL UPLANDS

STRETCHING from the northern slopes of the Alps and the mountains of the Bohemian Diamond to the shores of the Baltic and North Seas, the German States form the nucleus of Central Europe : and of the countries that may be considered to compose this region, Germany alone stretches through a portion of each of the four belts into which it is divided. Thus there lie within the confines of this realm a portion of the Alps, the region known as the Alpine Foreland, the Central Uplands and the Northern European Plain.

Though but a small portion of the Alps lies within German territory, yet this portion is the only part of Germany in which the elevation is more than 6,500 feet, and here on the Austrian border rises the Zugspitze which, with a height of 9,710 feet, is the highest peak in Germany.

Running in an easterly direction from Lake Constance to the Austrian town of Salzburg the German part of the Alps forms a portion of the limestone chains of the northern region of the Alpine system. Between the main chains run longitudinal valleys, but the principal northward flowing streams, on their way to the Danube, cut transversely across the longitudinal valleys. Thus the general direction of the Iller, the Lech, the Isar, the Inn and its tributary the Salzach runs from south to north during

the German part of their courses, that is, across the general direction of the grain. These transverse valleys form routes of varying importance.

From the valley of the Upper Inn the Seefeld and the Fern passes lead to the valleys of the Isar and the Loisach respectively. Both of these passes are conveniently situated as regards the famous Brenner Pass, which from early times has formed the main route between the towns of north-east Italy and those of southern Germany. To-day the railway from Innsbruck to Munich traverses the Seefeld Pass, and in Roman times the road to Augsburg also followed this route.

In the northern Alpine valleys lie such mountain ribbon lakes as the Ammer See and the Würm See. Between these northern slopes and the Danube stretches the Alpine Foreland, crossed by swiftly flowing streams that still add their load of *débris* to the accumulations of past ages. Those who have watched a mountain torrent after heavy rains, or during the spring when snows are melting on some mountain side, will realise the enormous power of erosion that such streams possess. These streams of Southern Bavaria have played a very important part in deepening the valleys and building up the plains on which they debouch. The Foreland near the base of the mountains is strewn with pebbles, while farther away the deposits become finer. It is no uncommon thing for the streams that flow across this *débris*-strewn plain to change their courses, especially during the periods of flood: this tendency has had a noticeable effect upon the sites of the villages and towns which have, as a rule, been built on the higher ground lying farther away from the inconstant streams. The resemblance between their sites and those of villages of the Po basin, where similar conditions prevail, will at once strike the traveller.

From the town of Regensburg the Bavarian Forest and the higher Bohemian Forest Ranges run from north-west to south-east, while along the foot of the former ridge the Danube flows south-eastwards. From Regensburg the valley of the Regen and that of its tributary the Cham form a route that leads to one of the few passes over the Bohemian Forest Range. On the Czechoslovakian side is the town of Taus. West of the Regen the Naab valley leads to the Fichtel Gebirge.

North-west of the Danube, the Swabian and Franconian Jura form the divide between this river and the Neckar, Main and other tributaries of the Rhine: the latter uplands are broader but lower than the former, and are traversed by gaps that resemble the *cluses* of the French Jura. Between these two uplands lies the basin of the Ries, whose volcanic strata have decomposed, forming fertile soil, and across which a way leads from the basin of the Upper Danube to that of the Neckar.

The Neckar displays interesting examples of river capture; in several cases it has captured the headwaters of streams that once poured into the Danube and thus here, too, a number of easy routes lead from one basin to another. If, for instance, a traveller were to leave the Danube and to walk up the pleasant valley of its tributary, the Brenz, he would arrive at Königsbronn, where this stream takes its rise. From here a walk of about four miles would take him into the valley of the Kocher, which flows northwards to the Neckar: the former stream has captured the headwaters of the now decapitated Brenz.

Such easy means of communication between the Rhine and the Danube was one of the principal reasons that enabled the state of Würtemberg to extend its boundaries to the shores of Lake Constance.

To the east of the Naab basin the Altmühl Valley forms a route to the Regnitz—a tributary of the Main. The last-named river rises in the Fichtel Gebirge. These uplands are an important hydrographical centre: in addition to the Main flowing westward, the Naab flows south to the Danube; the Saale and the Elster run northwards to the Elbe; and the Eger, another tributary of the latter river, flows east-north-east, south of the Erz Gebirge, until it joins the main stream of the Elbe shortly before it leaves Czechoslovakia.

Rising on the western side of the Thüringer Wald the Upper Weser (Werra) takes a northward course. Before reaching the Northern Plain the Weser traverses the eastern side of the Teutoburger Wald that thrusts itself in a north-western direction out into the plain. Across these ridges run transverse gaps, known as *doren*, which, like the gaps through the Franconian Jura, resemble the *cluses* of the French Jura. Thus these *doren* provide easy routes between the Ems and the Weser Valleys. Before it reaches the lowlands the Weser traverses the Porta Westphalica, a remarkable gap cut by the stream through a ridge running parallel to the Teutoburger Wald.

From the Leine, a tributary of the Weser, the Harz mountains rise steeply to the Brocken. But on the east they descend, by gentle slopes, to the Saale, whose valley, together with that of the Unstrut, forms a route leading from the Weser to the Elbe.

2. THE BASIN OF THE RHINE

It is, however, the Rhine Valley that forms the great highway and route between the south and the north of Germany. Its two headstreams have their sources in the Swiss Alps and after they have joined forces the waters of the united stream flow in a northerly direction until

they reach Lake Constance. On entering this lake the current of the stream slackens and its load of sediment is deposited until the river issues forth as a clear stream. It flows over the falls of Schaffhausen and later receives from the south-west the muddy waters of the Aar, whose volume at this point is greater than that of the Rhine itself. The Aar forms an important route giving access to northern Switzerland, while its eastern tributary valleys lead towards the St. Gothard and other Alpine passes. Cutting its way between the southern flanks of the Black Forest and the northern edge of the Jura, the Rhine enters the Rift Valley at Basle. Here the Burgundian Gate, between the Jura and the Vosges, leads southwards to the Doubs-Rhône Valley, north-west to that of the Moselle, and west to the Paris basin.

The ranges of the Black Forest decrease in height on the east of the Rift Valley, and north of the Kinzig valley, that leads up to the plateau forming the western boundary of the Neckar basin. The Pforzheim Gap, leading from Karlsruhe to Pforzheim on the Neckar, marks the northern end of the Black Forest Range. North of this gap lower hills continue along the eastern edge of the valley as far as the picturesque university town of Heidelberg, where they culminate in the Königsstuhl that rises to a height of 1,900 feet. Beyond the entrance to the Neckar Valley rise the granite hills of the Western Odenwald—a region almost encircled by the Rhine, the Neckar and the Main. At Mainz, where the Main enters the Rhine, the southern slopes of the Taunus form a barrier forcing the Rhine to turn westwards until it reaches Bingen.

Separated by the Burgundian Gate from the Jura, the Vosges are of only moderate height. They are more cut up than the Black Forest, and are more easily approached from the Rhine by means of comparatively

broad valleys, though the actual passes across them are somewhat high and difficult to cross. The Col de Saverne, marking their northern boundary, forms an important

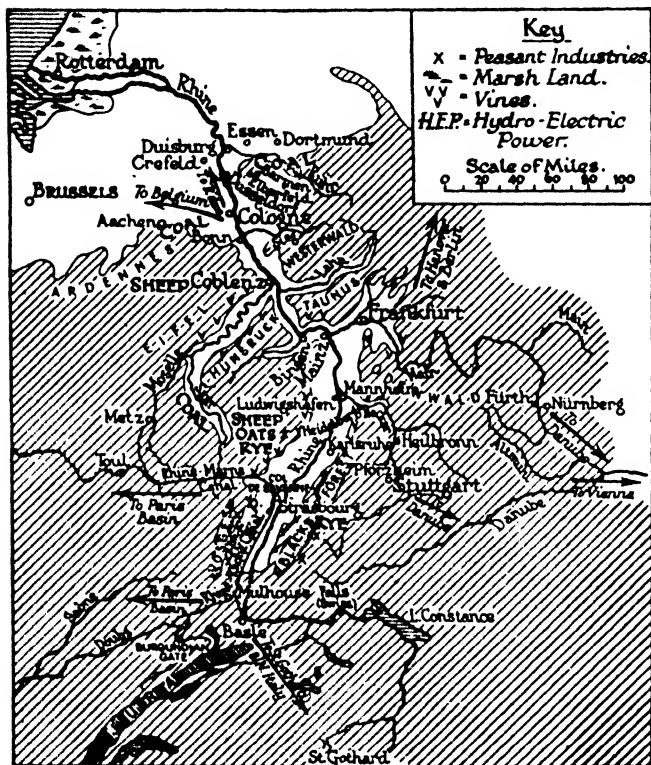


FIG. 4. THE RHINE.

route leading to the Paris basin. North of this gap the rather barren Hardt rises steeply from the plain. The Nahe Valley forms a south-west to north-east route

between the Hardt and the more westerly Hunsrück. The latter forms a continuation of the Taunus, and, like these uplands, is largely composed of schists.

The narrow Rhine Gorge commences at Bingen, and at Coblenz the Moselle enters the main stream on its left bank, while the Lahn flows in on the right. These two streams occupy a transverse depression that cuts the Rhine Valley at right angles. The fact that the valley of the Moselle is so steep and winding detracts somewhat from its value as a route.

North of the Moselle the gorge is bounded by the volcanic uplands of the Eifel on the west and by the Westerwald on the east. At Bonn the gorge ends and the Rhine crosses the wide "bay" which centres around Cologne.

At Duisburg the Ruhr, which has cut its course across the coal-bearing strata of northern Sauerland, enters on the right bank. After receiving the Lippe, the Rhine swings somewhat to the west, continuing in this direction until it reaches the Dutch frontier, where its delta commences.

8. THE NORTH GERMAN PLAIN

Much of the surface of the North German Plain, whose general slope is towards the north, is far from flat, though in few places does its elevation exceed 600 feet. Between the lower Rhine and the Elbe the land is, in the main, a level plain; but as one travels eastwards an increasing number of ridges and hills adds diversity to its surface.

Between the three lines of ridges running concentric with the Baltic coast are broad valleys, some of which are marshy, while the surface of others has become covered with sand, and their valley-like character is almost disguised by belts of pine woods. Of these three lines of hills the first consists of the low sandy or marl heights which

line the coast. Farther inland the more clearly defined Baltic Ridges form, in many regions, a distinct feature of the landscape. From Schleswig-Holstein these ridges may be traced through Mecklenburg and Pomerania to East Prussia. It is in Pomerania to the west of Danzig that they reach their greatest height. Still farther south a series of higher and more extensive ridges run from the North Sea, through the Luneburg Heath and the Flammings, to the plateau of Silesia and thence to Poland.

The North German Lowland is crossed by a veritable network of streams. The general direction of the main rivers is from south-east to north-west, but many of the tributary streams have a west-east direction, flowing along the beds of the valleys which lie between the concentric ridges.

It will, however, be seen that while the general direction of such streams as the Vistula, the Oder and the Elbe is from south-east to north-west, yet each of these rivers changes its direction to a more easterly one at some point in the lower part of its course.

Near Bromberg in Poland the Vistula alters its course and runs north-east, continuing thus to the head of its delta, when its waters divide: a part going through the Nogat into the Frisches Haff, but the greater volume flowing along a more westerly course into the Gulf of Danzig. Yet at one time the main stream of the Vistula followed the line of the Netze and the lower Warta, and entered the Baltic through what is now the channel of the Oder. Thus these two tributaries now occupy a channel that was once the main stream of the Vistula.

The Oder flows along the original course from its source to Leibus, which is situated at the confluence of the main stream and the Katzbach. Up to this point the river receives the drainage of streams flowing down the

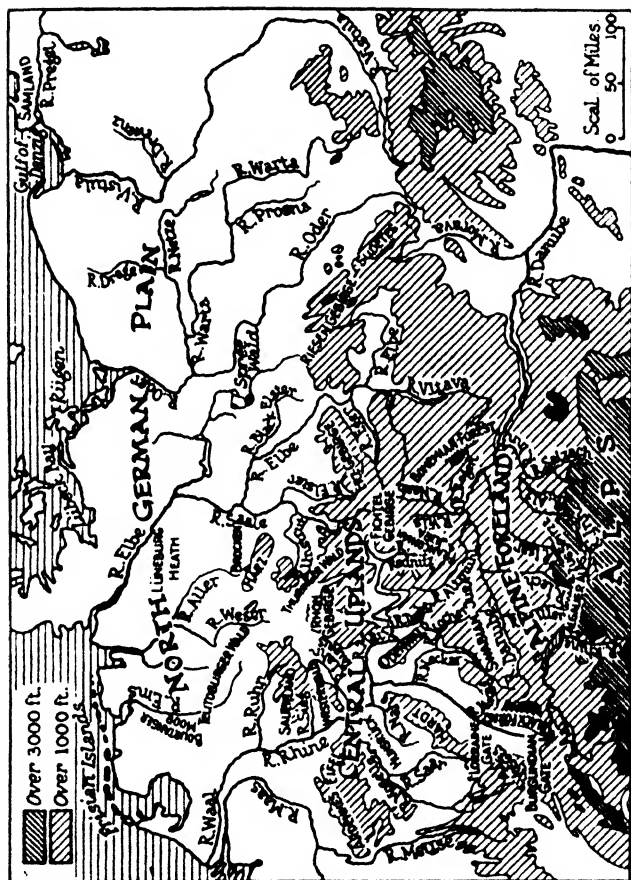


FIG. 6. THE RELIEF OF GERMANY

north-eastern slopes of the Sudetes: these affluents, though of greatly lessened volume, date from the Ice Age.

From Leibus the former course of the river ran west-north-west to Magdeburg. Part of this old bed is to-day filled by the Black Elster, a tributary of the Elbe, and part by a portion of the Elbe itself. For the rest this ancient river bed is dry: it is bordered on the north and south by low morainic ridges and is crossed by the northward-flowing Spree and other streams. At a still later period the Oder once flowed along the valley now occupied by the westward flowing middle Spree which, at the point where it changes its course from north to west, closely approaches the Oder (south of Frankfurt-on-Oder). At Spandau the Spree is joined by the Havel, which flows southwards from the hills of Mecklenburg. From Spandau the united streams, now known as the Havel, flow first south-west and then west, spreading out into a series of lake-like expanses that make crossing difficult. At the town of Brandenburg the Spree again widens into a lake and approaches closely to the Elbe; it then turns north-west until it flows into the latter river some 45 miles from Brandenburg. Thus the Spree-Havel line is continued by the lower Elbe which formerly carried the water of an earlier Oder to the North Sea.

The Elbe, instead of turning north at Magdeburg, as now, once followed the line of the present Aller to its confluence with the Weser, from which point it followed the channel of the latter river seawards. Thus at Bromberg the Vistula, near Frankfurt the Oder, and at Magdeburg the Elbe, all alter their original direction and from these points respectively take short cuts to the sea. At the same time portions of their former beds are now occupied by tributaries that maintain a west-east direction.

What has been the cause of these changes? According

to one school of geographers they are due to an uplift of the western portion of the German lowlands which had the effect of causing the rivers to flow in a more north-easterly direction. Another school, however, hold that the courses of the pre-glacial rivers have been altered as a result of the glaciation of the last Ice Age. But, whatever may be the cause, the change has had an important economic effect ; for the depressions now occupied by the tributary rivers, and also by the east to west valleys, have been utilised for the construction of canals which link the main streams. In this way Nature has done much to facilitate the canalisation of the region.

4. THE COASTAL LANDS

Within historical times the coast of the North Sea has undergone changes, for the sea has cut out such indentations as Jade Bay, and in the year 1277 it swept up the estuary of the Ems forming the present Gulf of Dollart. It has also separated the Frisian Islands from the mainland and greatly reduced the size of many of them, while it has demolished others altogether : Pliny mentions some twenty-three islands and at the present time there are only about two-thirds of that number. The rocky sandstone island of Heligoland has also suffered from erosion. After it was ceded to Germany by England it was fortified and its coasts were protected, but since the Peace Treaty of 1919 both fortifications and protecting wall have been dismantled, and it is once more being rapidly worn away.

On the other hand, extensive stretches of land have been reclaimed, and a feature of the coastline is the dykes that have been built by the inhabitants. An old proverb well illustrates how essential these dykes are, for it says :

" De nich will diken, mut wilken."

In the time of Charlemagne the town of Jever, in the alluvial district to the west of Jade Bay, was a seaside resort but now, owing to steady reclamation, it lies some twelve miles inland.

From Lübeck to the Oder Haff the Baltic coast consists of straight stretches cut by broad bays or narrower inlets that run far inland behind sheltering peninsulas. East of Stralsund the white chalk cliffs of eastern Rügen rise in Königsstuhl to over 400 feet. Between the low islands of Usedom and Wollin the channel of the Oder has been deepened to facilitate navigation, for the tidal range in the Baltic, as in most partially enclosed seas, is small, and consequently the river mouths tend to silt up.

Farther east the sea has straightened out the coast and has worn away the projecting capes and headlands. Long lines of dunes, on which the sand is piled high, stretch for miles along the monotonous coast only broken, here and there, by the half-silted-up entrance to a haff. East of the broad bay of Danzig the sandstone cliffs of the peninsula of Samland rise to a considerable height, but beyond the coast sinks again to the dunes of the northward stretching *nehrung* which encloses the Kurisches Haff; and inland all along the coast the sand is steadily encroaching and covering the surface.

NOTE.—Though a number of ports lie along the Baltic seaboard yet this coast lacks good harbours, such as those which indent the coast of Norway, or which are found along the shores of the British Isles. Thus the straight, unindented coast of the Baltic was not such as would encourage its inhabitants towards maritime development and the people were landsmen rather than seamen. On the other hand, the shorter North Sea frontier, with its better estuaries and harbours, and with its islands, did produce seafaring folk, and in modern times the economic development of Germany and the consequent overseas expansion of its trade have played a very important part in the rise of Bremen and Hamburg, both of which rank among the most important ports of Europe.

CHAPTER IV

CLIMATE

1. TEMPERATURE

THE prevailing winds over most of Germany blow from the south-west, though they are neither so strong nor so constant as those of North-Western Europe. Much of the country lies in the Central European climatic belt with warm summers and cold winters: a type that may be regarded as transitional between the oceanic climate of Western Europe and the continental type of Russia. In considering the actual temperature it is necessary to remember that, with the exception of the Rhine and its tributary valleys, the elevation of the country increases considerably from north to south, and this factor has the effect of equalising temperatures throughout Germany. Isothermal maps show the temperature adjusted to sea level and, therefore, in studying such maps it is important to bear in mind the fact that this temperature decreases, on an average, approximately 1 degree for every 800 feet of ascent.

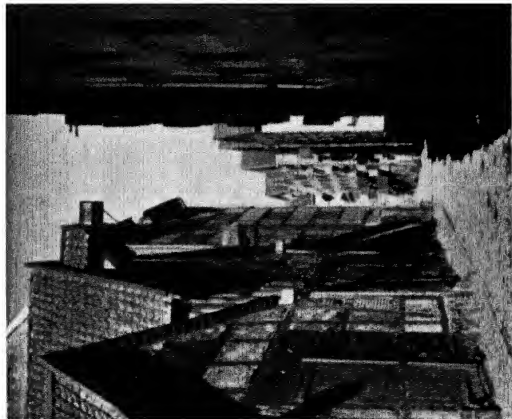
The main factor which affects the climate in summer is that the rays of the sun shine down much more directly in the south than they do in the north, and therefore the south is warmer than the north. At the same time regions nearer the sea tend to be somewhat cooler than those farther away. Thus the interior of the country is warmer than the coastal lands. The North Sea coast is slightly cooler than that of the Baltic, for while the

former region is exposed to the cooling winds from the Atlantic, the Baltic coast borders a sea which is almost land-locked and which has, therefore, only a slight cooling effect on the winds that blow over it. The difference in temperature between these two districts is well shown by the northward bend of the isotherm 64°F. as it runs eastwards. The general direction of the summer isotherms is from west to east, and towards the east they tend to bend northwards owing to the increasing heat of the land due to the decreasing cooling influence of the oceanic winds.

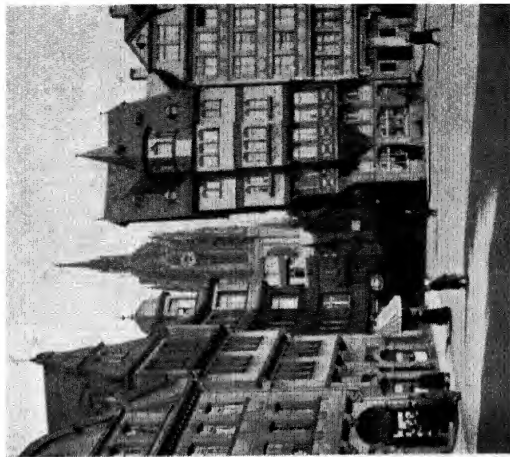
In winter the chief factor affecting the climate is that the land cools rapidly while the ocean retains its heat for a longer period. The sun is now overhead in the southern hemisphere and, though its rays still shine down more directly in the south of Germany than they do in the north, yet their warming effect is not nearly so great. At this season the westerly winds are comparatively warm winds, but as they blow eastwards over the rapidly cooling land their temperature falls and they lose most of their moderating influence. At this season the lands along the North Sea coast are warmer than those along the enclosed Baltic: for instance, the Frisian Islands are one of the mildest regions in Germany. A comparison of the January temperatures of Hamburg, Stettin and Königsberg will illustrate the difference between the North Sea and Baltic temperatures.

			<i>Altitude in feet.</i>	<i>Mean January Temperature.</i>
Hamburg	...	...	82	82.5°F.
Stettin	...	...	98	80.7°F.
Königsberg	...	...	16	26.8°F.

An interesting light is shed on the increasing continen-



OLD WAREHOUSES AT KÖNIGSBERG



FRANKFURT-ON-MAIN : THE CATHEDRAL AS
SEEN FROM THE OLD MARKET

Note the steep roofs of the old houses. Compare this style of architecture with that shown in Plate III.

talities of the German climate as one travels eastwards by the fact that in the Lower Rhine Valley the apple-tree usually begins to bloom between 29th April and 5th May, but further east in Silesia it does not flower until between 6th May and 12th May. Along the Baltic coast, where spring is usually raw and cold, the buds do not burst until between the 18th and 19th of May.

In the east of Germany, though the summer days are warm, autumn is neither so warm nor so prolonged as it is in the west. On the other hand, spring is slightly warmer in the east than it is in the west; for the cooling winds from the ocean tend to delay the rise of temperature in the latter part of the country. So if we compare the April temperature of Hamburg and Stettin (towns lying in practically the same latitude, at almost the same elevation, and in very similar positions), we find that the mean April temperature at Hamburg is 45.0°F . but that at Stettin, farther east, it is slightly warmer, being 45.8°F . In September, Stettin with a temperature of 57.4°F ., is warmer than Hamburg, which has a temperature of 56.5°F . In October, on the other hand, the temperature of Hamburg is 48.2°F ., while that of Stettin has fallen to 47.8°F .

The Rift Valley of the Rhine and the valleys of the Moselle, the Neckar and the Main are comparatively low-lying, and this (coupled with the fact that they are sheltered and are also situated in the southern portion of the country) causes them to have the most equable temperatures in Germany. The average annual temperature ranges from about 50°F . and upwards. The Rift Valley, south of Karlsruhe, has not only warmer summers, but also milder winters than most parts of Germany. At Karlsruhe itself, which has an altitude of only 410 feet, the January temperature is 32.9°F ., but at Munich in

the Alpine Foreland, which stands at a height of 1,789 feet, the January temperature is 27.8°F.

In the Alpine Foreland the winter temperatures are severe; for in addition to its elevation, most of this region faces north or north-east, and it is, therefore, exposed to continental weather conditions. During winter there are prolonged periods, not only of raw cold, but also of fog.

In the Bavarian Alps the increasing height causes a marked decrease in the mean temperature. At the same time the summits of the mountains are, in winter, singularly free from cloud; consequently, during the day time, the rays of the sun frequently cause the temperature to rise considerably. At night, however, this absence of cloud causes rapid radiation; the temperature falls very quickly and great cold is experienced. In the summer the air rises up from the valleys and is cooled and its water vapour condensed. Thus, during this season, the heights are often veiled in masses of cloud and the temperature is less than it otherwise would be. A *föhn* wind is frequent in the Bavarian Alps: currents of dry air descend the mountain side towards low pressure regions in the valleys and, becoming contracted during their descent, blow as relatively warm winds.

In eastern Germany prolonged frost and heavy snowfalls are the general rule throughout the winter months, but in the west climatic conditions are much less severe. The temperature map shows that nearly the whole of Germany lies within the isotherm 82°F. during January. In an average year most of western Germany has one month when the mean temperature is below 82°F., while in eastern Germany there are about four months when the temperature is below this figure, and during most winters temperatures less than zero occur.

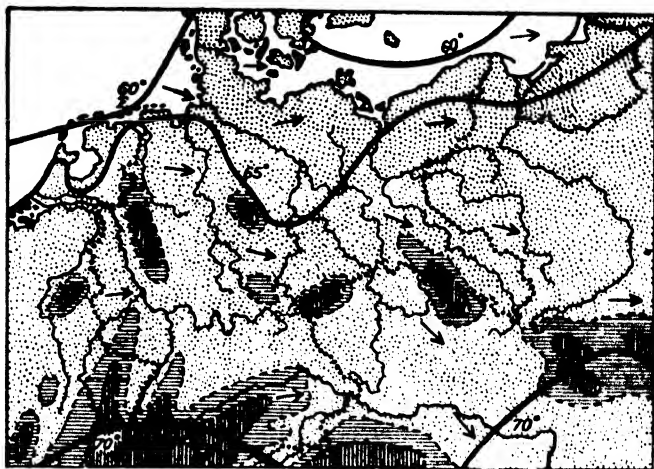


FIG. 6A—CLIMATE OF GERMANY
Summer Conditions : Rainfall, May 1 to Oct. 31.
Temperature, July.

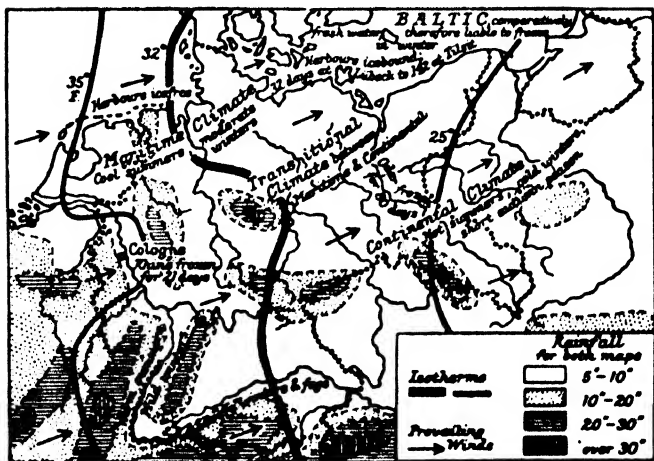


FIG. 6B—CLIMATE OF GERMANY
Winter Conditions : Rainfall, Nov. 1 to April 30.
Temperature, January.

All the German rivers are frozen over for at least a portion of their courses during the winter season. In the west the Rhine is usually frozen at Cologne for about 21 days. Farther east the Oder is covered with ice for 80 days and the Niemen (Memel) at Tilsit for over 180 days. Though the open Baltic itself is seldom frozen yet all the harbours along the coast from Lübeck to Memel are ice-bound for periods varying from 32 days, at the former port, to 142 days at the latter. The comparative freshness of the waters of the Baltic, as compared with those of the North Sea, also makes them more liable to freeze.

The North Sea harbours, on the other hand, are not ice-bound, but it is necessary to use ice breakers to keep the harbour of Hamburg, some distance up the estuary of the Elbe, free from ice during the winter months.

2. RAINFALL

The average rainfall throughout Germany is somewhat under 30 inches per annum. Broadly speaking the west of the country, being more exposed to the moisture-laden westerly winds, receives more rainfall than the east, and the mountain districts, especially those whose slopes face the prevailing winds, receive the greatest rainfall. The windward slopes of the Harz which form the first obstruction to the westerly winds receive heavy rain.

During the winter months much of Germany, in common with other parts of Central Europe, is a region of high pressure: the cold dense air helps to fend off the cyclonic storms that so frequently visit the British Isles and other parts of Western Europe at this time of the year. In summer the pressure is not so great and the depressions are able to travel inland. Thus the maximum rainfall throughout the country occurs, for the most part, during the summer months, during which season rainy periods

alternate with warm dry spells. In such regions as the Bavarian Alps the summer rains are extremely heavy, and the total rainfall in this region is greater than anywhere else in Germany.

In the Rift Valley the rainfall is small, but on the windward slopes of the Black Forest, which are exposed to the moisture-laden westerly winds, it is much heavier and these rains, by increasing the cloudiness, help to reduce the temperature. For a similar reason the western side of the Vosges receives a greater rainfall than the eastern slopes. Karlsruhe receives its greatest rainfall in summer and the next wettest time is October.

At Munich, however, these oceanic influences are absent and June, July and August are months of maximum rainfall. The amount of rain decreases through the autumn and winter with a minimum (1·8 ins.) in February.

On the northern plain comparatively low heights are (as in eastern England) sufficient to produce condensation, and the river valleys, though only slightly lower than the surrounding lands, receive a smaller rainfall. Thus the valleys of the Elbe and the Oder have distinctly less rainfall than even the low ridges.

CHAPTER V

VEGETATION, AGRICULTURE AND STOCK REARING

1. THE FOREST LANDS

AT one time the greater part of Europe was covered with continuous forests that stretched from the Atlantic seaboard, through Central and Northern Europe, to the forest belt of Northern Asia. Here and there mountain summits rose above the treeline, while probably the exposed, wind-swept shores of the North and Baltic Seas were treeless too. The loess belt, though suited to herbaceous plants, was, if not treeless, at least only thinly wooded, but with these exceptions the whole of this vast area was forest-clad. In Germany, however, as in most other parts of Europe, man has greatly modified the work of nature, and where once forests reigned supreme there are now wide-spreading cultivated lands, while marshes, moors and heaths have also been reclaimed by his resource and energy.

Even to-day about a quarter of Germany is wooded, but the present-day areas are not, in the main, survivals of the original forests ; many such regions were formerly suited to agriculture, and so most of the wooded districts now existing are due to the replanting by man of those regions that he has since found unsuited for agricultural pursuits. Forestry has long been an important occupation and in few other European countries are there such extensive woodland areas.

In the Uplands of Central Germany the forests on the lower slopes have been replaced by grasslands, gardens, fields, vineyards and orchards, and on the higher slopes woods and broad-leaved trees and conifers are found. The latter are far more numerous than the deciduous types, though in such regions as the Spezzart and the lower slopes of the Harz there are extensive woods of oaks and beech. These trees are also found in such widely separated areas as the Alpine Foreland, the lake district of Mecklenburg and the Spreewald, and both grow as far east as Königsberg, after which they disappear. Beeches and oaks, like other deciduous trees, need plenty of moisture and long summers; they therefore only thrive in regions where this season is warm, fairly prolonged, and where there is ample rain. Neither tree can stand great exposure, and they are not, therefore, found on the higher mountain slopes so well suited to the hardier pine. Thus the deciduous oak and beech are both absent from the Mediterranean lands owing to the summer droughts. Their presence in many parts of Central Europe indicates warm, rainy summers and also points to the fact that the regions in which they grow are sheltered.

Pines, on the other hand, are found spread over much larger areas. They do not require so much moisture as deciduous trees like the oak and they are also able to conserve their moisture, as their small needle-shaped leaves prevent undue transpiration. Pines not only do well in sandy regions, where they thrust their long roots far into the soil, but they are also able to stand the exposure of mountain slopes. So they thrive both on the sandy regions of the Northern Plain (where extensive areas have been afforested) and on the upland slopes of central and southern Germany. Another reason for the spread of pines is the fact that they grow much more quickly than oaks,

beeches and other deciduous trees, and have, therefore, a greater economic value. Woods and clumps of pines break the undulating landscape of the plains and towering pines clothe the valley sides of the uplands. The scent of the woods, the neat little piles of felled timber, the huts of the woodmen and the dark green foliage of the trees standing out against a background of red sandstone rock make a lasting impression upon the traveller who wanders along the sandy paths winding up the valleys of such a region as the Erz Gebirge.

Beyond the cultivated regions of the Rift Valley rise the bordering uplands of the Vosges and the Black Forest. Above the vineyards that clothe their lower slopes spread the pine woods. Over 60 per cent. of the former region is forest-clad, while the woodlands of the latter are even more extensive. In the Black Forest they are especially extensive on the western slopes, which are exposed to the prevailing winds and therefore receive copious rains. Silver firs are found on the lower slopes; in the higher woods spruce and pines abound. These forest areas extend northwards covering much of the highlands on either side of the Rhine Valley. In the west the Pfalz Uplands, the Hunsrück and the Eifel are all forested, while eastwards the Odenwald and the uplands that lie north of the River Main are covered with woods of Scotch pine, spruce and oak. In Sauerland only a few woods of oak, beech and birch still remain as evidence of the extensive forests that once covered this region. Here, as in so many other iron-producing areas, the trees were cut down to provide wood for smelting.

The mildness of the climate in the region around Lake Constance is reflected in the presence of such warmth and moisture-loving trees as cypresses, cedars and beeches. Many of the once extensive forests of the Alpine Foreland

and the lower slopes of the Alps have long been cleared and replaced by cultivated lands and pasture, which are, however, interspersed with woodlands of larch and pine. Some of the moorlands have been reclaimed, but it would not be a practical proposition to attempt to win back most of the extensive areas of the high moor where tundra-like conditions prevail.

2. MOORLAND AND HEATH

In northern Germany this work of reclamation has been carried on for a very long period and moorland, heath, marsh and swampy coastal lands have, through the scientific energy of man, been made fertile. The development of relatively poor agricultural land has been greatly assisted by the use of artificial fertilizers such as potash and products of potash and nitrogen.

Fringing the North Sea coast are the low, sandy Frisian Islands, while the dyke-protected coast of the mainland itself is bordered by mud flats which twice a day, at high tide, are covered with salt water. Gradually bog plants grow upon the low-lying portions of these flats and many of them have been dyked and drained by the coast people and turned into rich agricultural lands. Beyond these mud flats stretch marshes that gradually merge into the *geest*. These sandy, gravelly heaths are spread through much of northern Germany, and there are also large moorlands covered with thick beds of peat which often extend down to a considerable depth. An especially extensive area of heaths and moors is found in that part of the country that lies to the west of the Elbe.

Botanists draw a distinction between *moors* and *heaths*, though they have many similar characteristics, and it is necessary to understand the distinction, which is of real importance.

" 'Soils' are of many kinds. Some are composed chiefly of gravels or clays ; others are made up mainly of sand. Most soils are, however, a mixture of these and other materials. Some are 'warm' and some are 'cold.' Good soils contain vegetable matter known as *humus*.'"¹ In a fertile region certain bacteria are present in the soil and they assist the disintegration of dead and decayed vegetable matter that mingles with and enriches the soil.

In cold, wet regions, however, these bacteria are absent ; consequently the vegetable matter does not decay in the same way as it does in more favoured districts. Thus there is formed peat, which may be regarded as a half-way stage between vegetable matter and coal. The formation of peat on wet soils leads to the production of true moors, which frequently occupy large areas. On these moors layers of peat often extend to considerable depths.

" Heaths occur over poor, sandy and gravelly soils, on the surface of which lies a layer of peat, varying greatly in thickness, but never so deep that the underlying gravelly or sandy soil fails to assert its influence upon the plant life."² The formation of the layer of peat in a porous sand and gravel district may seem to be at variance with the statement that peat forms in wet areas ; for one of the essentials for peat formation is a damp soil which is not, as a rule, found in limestone regions where the soil is porous. In the latter districts the moisture soon drains away, but in some sandy, gravelly areas various complicated chemical changes take place which result in the formation of hard impervious layers (*ortstein*) a few feet below the surface of the ground. Such layers tend to produce the water-logging of the upper soils, and this creates favourable conditions for peat formation.

¹ *Exploring the British Isles.* J. H. Stemberge.

² *Frequented Ways.* Dr. M. Newbigin.

Until the middle of the nineteenth century the main occupations in such a region as the Luneburg Heath, between the lower Elbe and the Aller, were the rearing of sheep and the keeping of bees, though, where rivers and streams had washed away the overlying sand (thus exposing the more fertile underlying sandy marl and clay), some agriculture was carried on. Even to-day over a large part of this region the heath prevails. When the summer days are beginning to shorten, and the seeding of the plants and the gathering flocks of birds tell of the near approach of autumn, then the heath is at the height of its glory, its heather-clad surface broken only by holly and juniper bushes or by flaming gorse, while here and there clumps of pine or silver birch stand out against an ever-changing sky.

In other parts, however, the scientist has come to the aid of the agriculturist and has thus enabled considerable areas to be wrested from the all-devouring heather and to be made fertile. In such districts are to be seen fields of rye or buckwheat, or others where row upon row of potatoes spread across the one-time heath. How has this miracle been accomplished? The underlying layer of *ortstein* has been broken up by means of steel ploughs, whereupon the soil, now that proper drainage has become possible, has been treated with suitable fertilisers.

Though vast stretches of true moorland, such as the Bourtanger Moor, still exist, much has been done to reclaim certain areas. It is, however, obvious that owing to the greater depth of the peat the methods adopted will differ from those used on the heaths. In many districts the surface layers have been dug away, drainage canals cut, and the peaty soil mixed with sand and treated with suitable fertilisers. As late as the middle of the last century a much more wasteful method

of reclaiming moorland was adopted. The top layers of the peat were roughly dug, in order to dry them, and they were then set alight. Buckwheat was afterwards sown in the ashes for a succession of about six years, after which the land was cropped with rye and then allowed to remain fallow for a space of no less than thirty years.

Marshes have also been drained by the cutting of canals, and coastal lands rescued from the sea by building enclosing dykes and subsequently draining the land. The land which at present intervenes between the town and the sea has been reclaimed by the industry of successive generations.

The lower Ems flows across the Bourtanger Moor—an extensive region of fenlands and marshes, ponds and lakes which stretches northwards to the coast and westwards into Holland. On the edge of this moor stands Papenburg, situated amidst garden and field lands that have been won from the moor itself. Farther east Oldenburg is built on a tongue of firm land beside the river Hunte. Here, too, there is a considerable area of reclaimed land, and the once useless wastes have now been turned into rich pastures on which droves of horses and herds of cattle are reared.

3. DISTRIBUTION OF THE PRINCIPAL CROPS

Rye, oats, wheat and barley are the chief cereal crops grown in Germany. Wheat is only found in the regions of richer soils and, therefore, it is not extensively cultivated in the more northerly portions of the North German Plain on account of the general poorness of the soil. In regions of the Plain where the soil is sufficiently fertile, including the basin of the lower Vistula (Poland), there are considerable wheat-producing areas. The rich loess soils to the west of the Elbe, the valley of its tributary the Saale,

and the middle Oder region all produce wheat, as does the Rift Valley of the Rhine, as well as the districts of the Main and upper Danube.

Barley has a wider climatic range than any other cereal, but it grows best under conditions that are very similar to those required by wheat, though it prefers a somewhat more sandy soil. Thus one of the principal barley-growing areas is the plain of the upper Danube, where there are also extensive hop-growing districts. The excellence of both of these products has done much to contribute to the fine quality of Bavarian beers. Rye and oats are the main cereal crops produced on the North German Plain. Indeed, they are the chief grain products of the German soil. Of some 10½ million hectares that are laid down for cereal production there were in 1980 about 40 per cent. under rye, 80 per cent. under oats, but only 15 per cent. and 18 per cent. respectively under wheat and barley. Oats, like barley, have a wide climatic range, but the former crop can also be grown on a greater variety of soils than the latter. Rye will thrive on poor soils, such as those found throughout extensive districts in the north, and it can stand a damper climate than any other cereal.

Potatoes have a wide range of both soil and climate; they do well on lands suitable for rye, and, like rye, they are widely distributed throughout Germany. They are largely grown both for human and animal consumption. About 85 per cent. of the total crop is used for each of these purposes. The chief potato growing districts are, however, in the eastern and southern portions of the country. In addition some are used for industrial purposes and in distilleries for the manufacture of spirits.

In the loess regions of the Elbe, the middle Oder, and

the Rhine Valley west of Cologne, as well as in central Silesia and the delta of the Vistula (Poland), there are extensive areas under beet-sugar cultivation. This crop is a valuable one ; for, in addition to the primary yield of sugar, the refuse, in the form of beet-pulp, is a valuable fattening food for cattle and pigs and it can also be used as a fertiliser for the soil.

In northern Germany the conditions of soil and climate are uniform over large areas and therefore the natural tendency is to concentrate on one crop such as potatoes, sugar-beet or rye ; but in the more diversified regions that are found in the central and southern portions of the country, there is, as a rule, a much greater variety of crops. Thus in the Rift Valley we find hop gardens, tobacco fields, rich meadow lands, and hillsides whose lower slopes are terraced for vineyards, while above are dark pine woods that, in their turn, merge into upland pastures as the altitude increases.

4. THE VINE

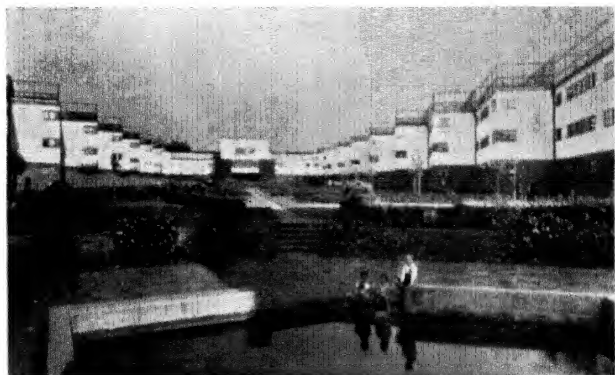
The German word for vineyard—*weinberg*—is instructive ; for the meaning of *wine hill* brings home in striking manner the relationship between the vines and the terraced slopes on which they thrive. Though the vine requires but a moderate amount of rain, yet the soil must be both warm and light, such as is found in chalk and limestone districts. In southern Germany, where rain falls during the summer months, the farmer's fear is, not that there will be a lack of moisture, but rather that the plants will receive too great a supply. The name *hock* is usually given to German wines, but the type of grape, the methods of treatment, and especially differences of soil, all have a great effect on the kind of wine that is produced. The vine requires much attention throughout

the year, and the ground between the plants must be kept free from weeds. On the hillsides of such districts as the Southern Taunus, the Black Forest and the Vosges the terraces are but a few feet in width, and the vines themselves are only allowed to reach a height of three or four feet. Early in the year pruning takes place, and then later the vines are staked and tied. Spraying commences early in summer and continues until the end of August. The grapes are not gathered until the end of September, for a prolonged autumn, with a fairly high temperature (60°F.), is necessary, so that they may ripen properly.

The principal vine-growing districts, in addition to those already mentioned, are the valleys of the Moselle, the Main and its tributary the Tauber, and the Neckar. There are also vineyards on the hillside of the Elbe Valley below Pirna and in the valley of the Saale and its tributary the Unstrut.

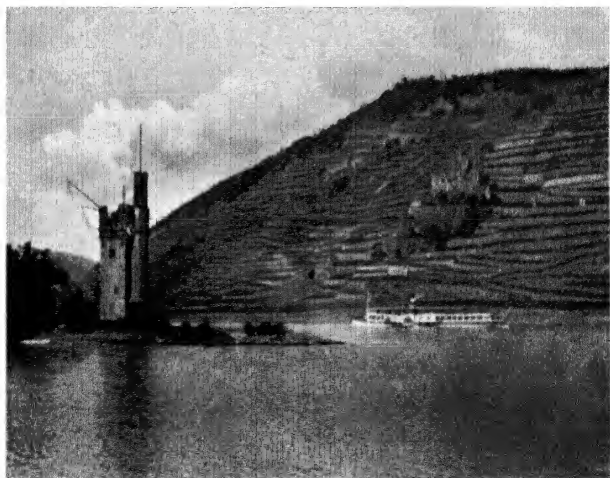
The northern limit of vine production in Europe extends from a little north of the Loire in a north-easterly direction until it reaches the vineyards around Grünberg. This town lies just south of the point where the parallel of latitude 52° cuts the river Oder. East of Grünberg the "vine-line" runs southwards. The reason for this is interesting. The vine, as we have seen, requires a prolonged warm temperature (60°F.), during the autumn, in order that the grapes may ripen. During the summer the heat increases as one travels from the west of Europe to the east; yet east of the Oder the temperature soon falls at the end of the summer months and there is, therefore, an insufficient length of time for the grapes to ripen.

PLATE III



MODERN HOUSES AT FRANKFURT ON MAIN

They are built so that each house can obtain the maximum amount of sunlight.



THE MOUSETOWER AT BINGEN

At the confluence of the Nahe and the Rhine. The hill-sides on the right bank of the latter river are terraced for vines.

5. THE LESSER CROPS

Of the lesser crops tobacco is grown in the Moselle and lower Main Valleys and south of Stettin chiefly on the west side of the Oder. Fruits range from cool temperate varieties in the north to those of warmer temperate regions, such as figs, peaches and apricots, in the south. On the edge of such industrial areas as the Saxon Coalfield are extensive market gardens, and asparagus is grown on a large scale in the basin of the Regnitz, especially round the town of Nürnberg. Farther south there are orchards of cider apples in parts of Swabia and Franconia. Flax is grown over such areas as the slopes of the Bavarian Forest range, the valley of the middle Spree, west of Danzig, and in East Prussia. The output of this crop is, however, declining.

6. DISTRIBUTION OF ANIMALS

In Germany rich meadow lands range from the North Sea and Baltic coasts to the uplands of the Alpine Foreland, where the tall waving grass reaches a height of several feet. Stock-keeping is an important industry and pigs, cattle, horses, sheep and goats are extensively bred. Pigs, which are the most important numerically, are chiefly reared in the north-west. One of their staple foods is potatoes and so each year large quantities of this crop are forwarded from the eastern growing districts to the western pig farms. The range of cattle is great, and such areas as the Regnitz Valley and the Naab basin, as well as the Alpine Foreland, are all noted for their cattle. The latter, together with the plains of East Prussia and the pastures of Schleswig-Holstein and Mecklenburg, are celebrated horse-breeding districts.

Sheep are, as a rule, found on the poorer pastures and large flocks are kept on the big estates in the north-east and also on the moorlands and heaths. On the still poorer pastures and in the less accessible mountain districts many goats are bred.

Enormous numbers of geese are also reared on such grasslands as the coastal lands lying to the east of the Oder and those lying north-east of the same river in Silesia. On the Luneburg Heath, and similar regions, bee-keeping is an important occupation, for the flowers of the heather help to provide the bees with material for extremely fine honey.

7. FARMING METHODS

Until the middle of the last century the population of Germany was predominantly agricultural and even to-day nearly one quarter of the inhabitants is engaged in agricultural pursuits. Most of the farms are comparatively small and about 78 per cent. are worked by men whose holdings vary from 2 to 100 hectares in size (1 hectare = 2.47 acres). The big estates are found chiefly on the broad plains of northern and eastern Germany. The size of such estates increases east of the Elbe, where one may see the houses of the little villages grouped around the church or round the long, low farm-buildings of the owner. The smaller ones lie in the west amidst the hills and valleys of southern Germany, where the great varieties of climate, soil and topography tend to encourage subdivisions. In Germany, as in France, a very large proportion of the farmers own their own lands.

Small holdings appear to pay better than the larger farms. This is probably due to the fact that on the

former, where the farmer and his family provide most, if not all, of the labour, the land is tilled with greater care, and, as a rule, crops are grown that require careful husbandry, and whose value is great in proportion to the space that they require and to their bulk.

On the large farms and estates of the north and east it is, of course, necessary to hire labour. Many of the German working classes prefer, however, the industrial life of the towns, with its much higher wage standard, to the simple, quiet, rural life of the countryside; there is, therefore, a shortage of agricultural labour in many districts. This deficiency is, in part, remedied by importing Polish workmen from the adjacent state. The various Federal Governments are attempting to stop this townward drift, and, with this end in view, are stimulating land settlement and building better houses for the peasants. In some districts agricultural labourers are paid in kind, instead of by money, under the *hofgaenger-system*. The worker has an allotment of land in lieu of wages, and in return for this he has to sign a contract, extending over a term of years, in which he undertakes not only to give a certain amount of personal labour to his employer, but also to supply other hands to work for his master at certain times. This system, though favoured by many landowners, is certainly not popular with the workers.

In order to encourage the extension of small holdings the Federal States are required by the *Reich* to acquire land for this purpose. A scheme, with this end in view, was established in 1919, but up to the present time, owing to a variety of causes (including opposition by big landowners), the project has not met with great success.

In many other ways the State does much to develop and control agriculture: farmers are encouraged to use modern machinery, to study scientific methods of cultivation and

to drain and reclaim lands. They are assisted in doing so by the necessary loans and credits. Careful investigations have shown how important is scientific training, and there are agricultural schools and institutes throughout the country.

CHAPTER VI

INDUSTRIAL GERMANY

1. COAL AND IRON FIELDS

THE industrial life of Modern Germany may be said to have begun with the successful conclusion of the Franco-Prussian War of 1871, and from that date until the middle of 1914 the commerce and industry of Germany developed with rapid and increasing vigour.

The trade of Germany was devastated as a result of the late war, but after the Treaty of Versailles (1919) she commenced to build anew upon the ruins of her former greatness. Until the world economic depression that commenced about 1930 her recovery was rapid, and many of her industries acquired renewed power, some attaining a vigour that even in their most flourishing pre-war years they had failed to reach.

The German coalfields are more limited in area than those of Great Britain. The principal fields are those of the Ruhr, Saxony and Upper Silesia, with smaller ones in Lower Silesia and around Aachen, the latter forming the eastern prolongation of the Franco-Belgian coalfield. In few other countries is mining organised in so scientific a manner. Machinery is used on an extensive scale in the Ruhr and Aachen districts where some 70 per cent. of the coal is hewn by mechanical means ; in Lower Silesia over 76 per cent., and in Upper Silesia 54 per cent. is obtained by these means.

The Ruhr coalfield is not only the most important in

Germany, but also the greatest in Europe. It forms one vast industrial region which stretches practically without a break from Duisburg eastward to Dortmund. On this field not only are coal and iron ores found in close proximity, but there is a plentiful supply of limestone for smelting, and these advantages played an important part in laying the foundations of this great industrial district. At the present time iron ore is sent from other parts of Germany and also from other countries to be smelted here. The famous Krupp ironworks are situated at Essen, where locomotives, farm machinery and many other iron and steel products are also manufactured. Stretching for some 7 miles north-eastwards from Barmen to Hagen is a narrow valley crowded with ironworks and blast furnaces. At night the whole district is lit up by the lurid flames from the furnaces; moreover, the clouds of smoke that they continually belch forth have blackened the whole district and have covered houses, factories and the few trees and plants that survive with soot and grime. To the south, the iron fields of the Sieg Valley have caused the southern prolongation of these industrial areas where the Solingen and Remscheid are both noted for their cutlery.

On the Saxon coalfield there are important ironworks at both Chemnitz and Zwickau. Here too, as in the Ruhr coalfield, the presence of the local iron ore was the original cause of the iron smelting industry, but, as in the latter region, ores are now sent from other areas for smelting.

In the coal basin of Upper Silesia there is another great industrial district which, in 1914, ranked only second to the Ruhr, but now most of this former German territory has been transferred to Poland and Czechoslovakia. In this region factories and mines are crowded together; almost unbroken lines of houses stretch for many miles, and

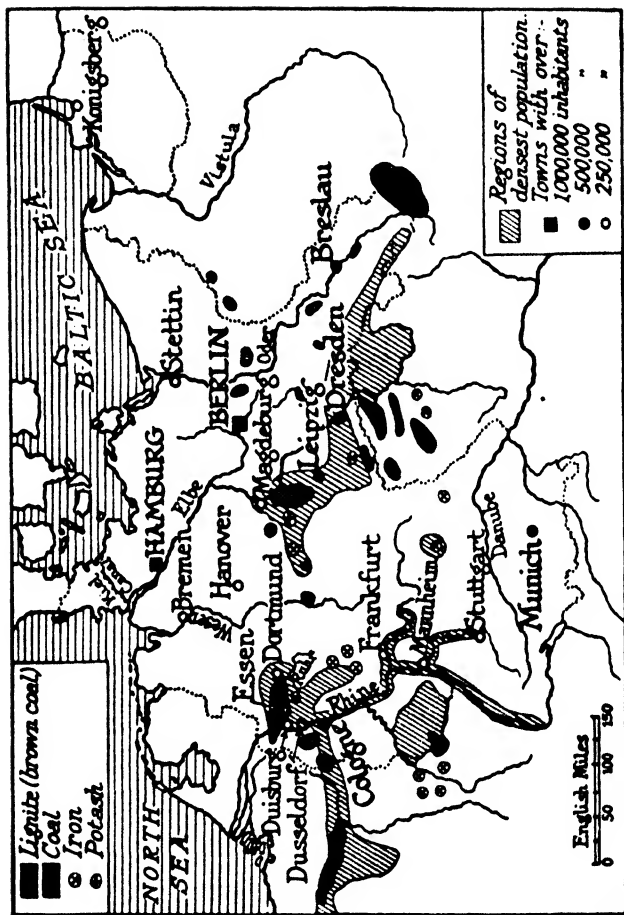


FIG. 8.—DISTRIBUTION OF MINERALS AND CHIEF TOWNS

a network of railways covers the whole area. From the river port of Cosel, on the Oder, a canal runs eastwards into the very heart of this hive of industry and along its murky waters, as well as along those of the Oder itself, travel strings of barges laden with coal and other produce. Many of the coal and iron districts, as well as valuable zinc and lead mines lie, however, in the area that is now Polish, and, as a result of this change, the economic life of German Upper Silesia has suffered greatly.

This region is only one of the industrial areas that no longer belong to Germany, for she has also suffered great losses of territory in Alsace-Lorraine and in the Saar basin, and, in addition, she is no longer able to obtain the iron ores of Luxembourg on such favourable terms as in pre-war years, since this state no longer forms a part of the German Customs Union, having entered that of Belgium. In Alsace vast deposits of iron-ore, coal and potash are now in French territory, while the ownership of the Saar coal mines is now vested in France.

And yet, as a result of her enormous efforts, Germany has done much to neutralise the very extensive losses that she has sustained. The amount of iron-ore obtained within her own frontiers is at the present time greater than it was in 1918. For instance, there is an increase in production of pig-iron of some 20 per cent., and over 80 per cent. in that of ingot steel.

There are extensive supplies of lignite or brown coal in Prussia, Thuringia and in Saxony. In the former state the regions around Bitterfeld, on the Mulde, and others, on the borders of Brandenburg and Silesia, are important, and north-west of Magdeburg another district extends southwards towards Leipzig in Saxony.

For centuries mining has been carried on in many parts of Germany and to-day, though many of the workings

are no longer profitable, yet zinc, lead and copper are still mined. The first of these three products is obtained in the Aachen field as well as in the German Silesia, and copper is obtained around Mansfeld in the Harz, but lead, silver and zinc are no longer obtained from these districts.

2. THE DEVELOPMENT OF ELECTRIC POWER

There are many European countries where the development of electric power far exceeds that of Germany, but in the latter state its use is rapidly increasing. The amount of electricity produced by steam engines and turbines is, however, much greater than that obtained by means of hydro-electric power. In this respect it may be mentioned that lignite is used to provide fuel for many of the power stations that are established in the mining areas, at such places as Bitterfeld and Bohlen, south of Leipzig. By this means the cost of transporting the necessary fuel is negligible and so there is a saving in the cost of generating the electricity.

The chief hydro-electric stations are situated in the mountains of southern Germany and in the Alps. Advantage has been taken of the scheme for the canalisation of the Neckar to erect power stations, and others are being constructed in connection with the deepening of the river Main between Aschaffenburg and Würzburg. Lying amidst the Bavarian Alps are two lakes—the Walchensee and the Kochelsee—and though these sheets of water are less than two miles apart, yet the latter is situated at a height of over 600 feet above the level of the former. The fall of water between the two lakes has been utilised and a huge hydro-electric power station has been built that will in time supply a large part of Bavaria with electricity. Another Bavarian power station, Innwerk, near Mühldorf, on the Inn, has a capacity of 100,000 h.p. In such regions

as the Erz Gebirge and the Ruhr, streams have been dammed to form reservoirs and also to provide power for the generation of electricity; while the torrents that tumble down the wooded slopes of the Black Forest and the Vosges (France) also yield power for this purpose.

3. CHEMICAL INDUSTRIES

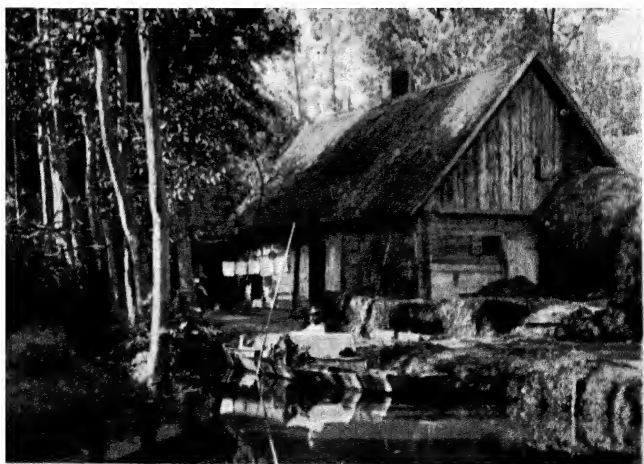
There are in Germany extensive deposits of salts. They occur chiefly in rocks which lie buried beneath the glacial drift which covers so much of the North German Plain. At Stassfurt, in Prussian Saxony, there are beds of exceptionally pure rock salt above which lie rich deposits of potash, and, as Germany is the one country in the world where such deposits are found on a sufficiently large scale to be of economic importance, the value of these salts is considerable. Deposits of potash are found around Hanover and Halle and also in the Unstrut, Werra and Fulda Valleys of the Thüringian basin. Not only is potash an extremely valuable fertiliser, but carbonate of potash is used in bleaching and dyeing, soap making and calico printing; nitrate of potassium is used in the manufacture of gunpowder and in the making of glass; cyanide and iodide of potassium are used in photography. Thus these potash deposits have not only done much to assist in the development of German agriculture, but they have also helped to lay the foundations of the great chemical industries for which the country is famous. At the Leuna chemical works, south of Merseburg, on the Saale, over 500,000 tons of nitrogen are produced each year, much of which is combined with potash to manufacture fertilisers.

The chemical industry and scientific education have marched, hand in hand, along the path of progress, and each has had an important reaction upon the other. For instance, the production of coal-tar dyes was due to the

PLATE IV



AMMONIA WORKS AT MERSEBURG



A TYPICAL PEASANT'S HOUSE IN THE SPREEWALD

These flat punt-like boats are much used in this district, but are rarely found in other parts of Germany.

scientific skill of German chemists: before the war, Germany held a monopoly in the production of this product and, at the present time, she is still the leading coal-tar manufacturing country. So important are the chemical industries that they require vast supplies of raw materials and as, in many cases, these supplies are both bulky and heavy, the chief centres of manufacture are situated on the waterways in order to take advantage of the comparative cheapness of water as compared with land transport. Thus some of the principal seats of the chemical industry are at such places as Ludwigshaven (opposite Mannheim) and Leverkusen (below Cologne), both on the Rhine; at Frankfurt and Höchst on the tributary Main; and at Berlin, on the Spree.

Hydro-electric power, too, is an important factor in the location of certain branches of the chemical and metallurgical industries: a very high temperature is needed for the manufacture of such substances as aluminium, and, consequently, it is important that works should be situated where plentiful supplies of electric power are available. The aluminium works of Toeging, on the Inn, utilise half of the total power of Innwerk Power Station near Mühldorf, and the power station of Tacherting, on the Alz—a tributary of the Inn—uses its entire output of electricity for the manufacture of various chemicals.

4. TEXTILE INDUSTRIES

The German textile industry is of great importance, and though most of the principal centres lie on the coalfields, yet this industry in common with many others is spread throughout the country. One of the chief textile centres is the Ruhr basin. In so thickly populated an area as this vast industrial region there is a big local demand for clothes and all kinds of textile goods, and these facts alone

have greatly assisted the industry. Barmen and Elberfeld both manufacture woollen and silk goods. The former town is famous for its ribbons and other trimmings; the latter has important dye works. On the opposite side of the Rhine, Krefeld is noted for its silk manufactures.

Before the rise of modern industrial Germany, the chief occupation of those people of Saxony whose homes were on the slopes of the Erz Gebirge was sheep rearing. In many other districts, not only in Germany, but also in France and the British Isles, this led to the development of the spinning and weaving of wool as a home craft. For generations there were in many parts of Saxony weavers whose dexterity was handed down from one generation to another. At the present time more than half the knitting and weaving industries of Germany are carried on in Saxony. In many similar areas the inherited skill has been transferred from the woollen to the cotton trade, but throughout Saxony, though the cotton industry is most important, yet the manufacture of woollen and other textile goods also ranks high, and in few other areas is so great a variety of textile occupations carried on. Chemnitz, the chief cotton manufacturing town, specialises in weaving, and neighbouring towns also weave wool or a mixture of cotton and wool. Others make stockings, lace and gloves, or weave linen, using in part local flax grown on the hillsides, and in part imported raw material. South-west of Zwickau is Plauen, one of the principal centres in Vogtland, making embroidery and curtains, while other towns are engaged in spinning, weaving, bleaching and dyeing. The presence of iron-ore on the Saxony Coalfield has also led at Chemnitz and Zwickau to the manufacture of machinery needed for the textile trade. In many of the mountain valleys of southern Bavaria cotton spinning is one of the principal

occupations, cheap water-power being obtained from the many streams that flow down the wooded hillsides. Thus such towns as the mediæval centre of Augsburg on the Lech, and Kempten on the Iller, are cotton centres. In other districts such as the valley of the Fils, a tributary of the Neckar, the spinning of flax and the weaving of linen are also important.

Breslau, in Silesia, manufactures woollen goods, but the whole of this region has been adversely affected by the loss of vast industrial districts to Poland.

The manufacture of scientific instruments for which Germany is famous can be traced to the development of scientific research at the Universities, and the university town of Munich is noted for the production of these goods.

5. THE INDUSTRIES OF THE FOREST REGIONS

In a country where forests and woodlands are so widely spread as they are in Germany, industries that are dependent on them are naturally numerous, and this is specially the case in central and southern Germany where woods and trees are a predominating feature in so many districts. The occurrence of *wald* (forest) in so many German names is, thanks to scientific afforestation in many regions, as appropriate to-day as it was in past centuries. In Bavaria the number of acres of woodland to each hundred people is 95, while in the British Isles the proportion is somewhat less than 8 acres per hundred. The felling of timber is an important occupation and there are in Bavaria alone about 1,500 sawmills.

The paper industry, too, is widely spread in this state, for, in addition to the timber supplies, there is abundant water power: some of the most important factories are situated at Aschaffenburg, on the Main; at Mittweida, in the wooded Zschopau Valley; and at Leipzig where the

paper trade is associated with the book publishing industry; Stuttgart is another important printing and publishing centre. Many other industries of varying importance are also connected with the forests and are carried on amidst the wooded valleys of southern Germany. The ancient city of Nürnberg provides, in addition to its many other activities, a collecting centre for the toy making carried on in the peaceful villages set amidst the tree-clad valleys of the Franconian Jura and the Fichtel Gebirge. The little village of Triberg, spread alongside the Elz, rushing onwards between the dark pine woods of the Black Forest, is a centre for clock making, while the wood carving of Pforzheim has led to the growth of the present manufacture of musical instruments in that town.

In the villages of the Harz and Thuringian Uplands the manufacture of toys is also one of the principal home occupations. Another industry associated with the woodland districts is the making of musical instruments. The picturesque village of Mittenwald, in Bavaria, has for generations been the home of violin makers.

Stuttgart, Leipzig and Dresden are noted for pianos and the latter town has given its name to the porcelain that is made at the neighbouring town of Meissen.

The glass industry has for generations been established in southern Germany, for there are not only plentiful supplies of sandstone and other materials, such as limestone and soda, but also ample quantities of wood for use as fuel. Thus the villages of the Fichtel Gebirge, the Bavarian Forest, and the Franconian Jura have long been centres of this industry, and Nürnberg and the neighbouring town of Fürth specialise in the production of plate glass, for which only the finest materials can be used. Many of the villages and towns of the Fichtel

Gebirge, such as Selb, are also engaged in the making of porcelain, as in many districts the weathered granites provide excellent kaolin for this purpose.

6. INTERNAL AND FOREIGN TRADE

Of all the European countries it was Germany who, before the war of 1914 to 1918, showed the greatest expansion in her foreign trade, and in recent years the trade of few other countries has displayed such great recuperative powers. The reorganisation of industry and an excellent system of transport both by land and water, coupled with the determination and energy of her people, are some of the chief factors that have helped to place her foreign commerce on a sound basis.

The wide-spread railway system is joined to that of neighbouring countries which, with the exception of Russia, have the same width gauge—a very important consideration in transport. This network of railways is supplemented by many inland waterways and these, too, are linked with those of her neighbours, the only exception to this being Italy, separated from Germany by the Alps. In this respect it is interesting to note that the piercing of this barrier by the St. Gotthard and other railway tunnels has had a far-reaching effect in increasing modern trade between Italy and Germany.

This inland transport system, in addition to facilitating the movement of goods between Germany and her land neighbours, enables both overseas imports and exports to be handled quickly and cheaply, for it is by the sea-ways that the bulk of the foreign trade of the country is carried on.

The United States of America head the list of countries from which Germany imports the bulk of her foreign produce : the total value of her imports from them during

recent years has been about 2,000 million marks per annum. The Argentine with about half that amount ranks next on the list, and the United Kingdom with about 900 million marks¹ comes third. Cotton bulks largely in the goods that the United States send to Germany, while cereals and wool are amongst the chief exports of the Argentine. As compared with the years before the war the exports of wheat from Canada have doubled and those from Australia have increased three-fold. On the other hand, the yearly amount of wool that Australia sent to Germany, up till 1931, was somewhat less than it n 1913.

The chief commodities that the British Isles send to Germany are raw or semi-manufactured materials, such as raw or semi-raw wool, unfinished cotton goods and coal. With the exception of coal, these are goods that have been re-exported from the British Isles. The principal exports from Germany to the United Kingdom are woollen, cotton, silk and artificial silk goods, furs, paper and iron goods.

The result is that most of the exports from the British Isles are goods in transit for which the ports are simply entrepôt centres, and so little work is provided in Great Britain. But the products that Germany sends to the British Isles are manufactured goods, and these give employment to many German workers.

The United Kingdom is Germany's best customer and from 1924 to 1931 British imports from the latter country showed a steady increase; on the other hand, British exports to Germany, during the period, displayed a steady decline. The effect of the new tariff policy adopted by Great Britain in 1931-32 will provide an interesting study for the commercial geographer.

¹ At par.

CHAPTER VII

THE ALPINE FORELAND AND THE ALPS

THE Danube may be broadly regarded as forming the northern boundary of the Alpine Foreland, though the region to which this name is given extends farther north in the area drained by the southward flowing Naab. From the Alps the rivers Iller, Lech, Isar and Inn flow northwards across the diluvial plain to join the main stream.

Though much of the forest land has been cleared for agriculture, extensive areas are still thickly wooded and forestry is one of the chief occupations, especially on the lower slopes of the Alps. Rye, oats, barley, wheat and potatoes are some of the principal crops, and around Munich there are extensive hop gardens. Flour milling is carried on throughout this region, the mills themselves ranging from the old-fashioned watermill to those fitted with the latest modern machinery. The rich pastures of the Allgau are noted for their cattle; here the town of Kempten is the principal dairy centre. In this district the dairy industry has given rise to the manufacture of wrapping paper in which to pack cheese and butter.

For a long time the absence of coal proved a great handicap to industry, but the modern growth of hydro-electric power has done much to revive and stimulate industrial effort. Thus at Kempten and Augsburg there are important cotton manufactures based on cheap water-power.

The beautiful town of *Munich*, on the Isar, is the most important town of the Foreland. As the capital of Bavaria it has long been an intellectual centre: its art galleries, churches and fine public buildings give it an air of distinction, though it has not that mediæval atmosphere which Nürnberg seems to preserve even in the midst of its modern industries.

Its position on the northward routes from Venice and northern Italy, by way of the Brenner Pass and Innsbruck, made it a most important town in the Middle Ages. At Munich these routes divide: the westward one goes by way of Augsburg to Frankfurt and the Rhine; the northern one runs down the Isar to Landshut. Here it splits; one branch continues down the Isar and across the Danube, whence it ascends the Böhmer Wald and makes for Pilsen and Prague; the other runs from Landshut to Regensburg.

Hops and barley, combined with the excellence of its water, have made Munich world-famous for excellent beer, and the art of brewing has for generations been its principal industry. As early as A.D. 768 Bavarian chroniclers mention the *humlaria* (hop gardens) at Freising near Munich. Like the towns of the Central Up-lands, it also specialises in the manufacture of light goods such as glass and scientific instruments. Timber from the forests is floated down the Isar in rafts, so that the town is a great timber market as well as being engaged in the manufacture of furniture. It also makes agricultural and brewing machinery and builds locomotives. As in many other towns in Catholic Bavaria candle making is one of the lesser industries.

North of Munich the town of *Regensburg* stands at the great bend in the Danube, at a point where this great waterway meets the land routes. The northern route,

already mentioned, follows the Naab, crosses the Fichtel Gebirge to the town of Hof, and thence makes for the Northern Plain and Berlin. A southward route goes by Landshut to Salzburg, and one north-west to Nürnberg. Regensburg is an important port and is, like Mannheim on the Rhine, an entrepôt centre importing maize from the Hungarian Plain and wheat and oil from Rumania.

Augsburg, on the Lech, was founded by the Romans, and like other towns in southern Germany was an important trading centre in the Middle Ages. In addition to its cotton manufactures it also has a light metal industry. Another ancient town, *Ulm*, is situated at the confluence of the Danube and the Iller. The route to the Rhine goes by the Fils and Neckar valleys.

At the point where the Danube leaves German territory stands *Passau*, built round a rock, where the muddy Inn pours its waters into the main stream. Graphite is mined in the locality, and, according to some authorities, the lead-pencil industry of Nürnberg owes its origin to these supplies.

These cities of southern Germany have preserved much of their old-world character ; but even though they have, in many cases, become modern manufacturing centres yet they cannot compare in importance with the great industrial centres of the north. The Middle Ages saw the height of their prosperity and modern developments of hydro-electric power may still revolutionise industry in this region. Nevertheless, the south German peoples have not the same outlook as their northern kinsfolk, and the human factor, even to-day, plays a very great part in the development of industry.

CHAPTER VIII

THE CENTRAL UPLANDS

1. THE DIVERSITY OF THE CENTRAL UPLANDS

THE Central Uplands of Germany form part of that block of mountains which extend from the Carpathians to the west of the Rhine: the Danube marks their southern boundary and on the north they front the great European Plain. Here is no homogeneous area like that of the Northern Plain, but rather a region that at every turn and corner presents an infinite variety of structure and form; it is a veritable mosaic in which nearly all geological formations are represented. There are no great heights, but sometimes the mountain slopes rise steeply, and sometimes they stretch upwards in gentle curves to rounded crests. Except for the Rift Valley of the Rhine, which forms a well-defined south to north route, no main feature lines can be called characteristic of the topography of the Central Uplands, for these feature lines run in all directions. Down the slopes of the hills flow countless streams running north and south, and east and west; sometimes they dash in cascades over beds of hard resistant rock, sometimes they wind through steep-sided valleys and at other times they flow gently across the marl and clay. And here, too, is a great variety of vegetation: dark green pine woods, such as those that clothe the upper slopes of the Black Forest or the Vosges, forests of wide-spreading beech and oak like those of the Spezzart region; lush meadows, vineyards climbing the hillsides, orchards and gardens, arable

land planted with barley, rye, wheat or maize, potatoes, sugar-beet and many other crops. Here is a little village straggling alongside a rushing torrent, and there is the sandy track that leads through the forest, by the side of which the traveller may spy a woodman's hut, while on a frowning crag is perched an ancient castle—so weather-beaten are its walls that rock and building seem almost blended into one. And all these things—hills and streams, pasture and plough-land, vineyards and woodlands, little villages, quiet market towns, and mediæval cities, like old walled Nordlingen, form part of the picture. But a part only; for busy modern towns, like Zwickau, are also situated here; and in the north-west corner of this region is that great industrial area, a veritable human hive, that centres in the Ruhr and Sieg Valleys, where factories, mines, unsightly dumps, blast furnaces and rows of closely-packed houses stretch for miles. This, then, is Central Germany—the land of legend and romance, of factory, mine and saw-mill, a region of infinite diversities, of many parts each revolving round its own little centre.

2. THE RHINE FROM ITS SOURCE TO COLOGNE

From prehistoric times the Rhine has formed one of the great waterways of Europe and its valley has been one of the principal routes from south to north. Though its source is in Switzerland and though it enters the North Sea through Dutch territory, yet the Germans regard it as their national river; it is inseparably bound up with their history, it has had a profound influence on their literature and some of their most important towns are situated along its banks. Since the Treaty of Versailles the river has been an international waterway, and forms, in part, the boundary between France and Germany; nevertheless,

the majority of the inhabitants of both sides of the stream are Germans and speak the German language.

The Rhine may be divided into six sections :

- (1) The mountain section from its source to Lake Constance.
- (2) The section from Lake Constance to Basle.
- (3) The Rift Valley from Basle to Mainz.
- (4) The Gorge from Bingen to Bonn.
- (5) The Lowland Section.
- (6) The Delta.

On leaving its torrent track, the Rhine enters Lake Constance, where it deposits its load of sediment. It issues forth as a clear stream and, flowing in a westerly direction, traverses an *enclave* of Swiss territory, descending at Schaffhausen for 70 feet over a bed of hard resistant rock. Later it receives the Aar, from the south-west, which brings a volume of water to the Rhine greater than that of the main stream itself. At Basle it enters the Rift valley. (See Fig. 4 for this Chapter.)

Below Basle the floor of the Rift Valley is covered with alluvial deposits that form, in the main, a rich, fertile soil. A wooded strip of sand and gravel borders the stream on either side, and beyond this is somewhat lower and damper ground that is covered with meadows which, in their turn, are succeeded by the cultivated zone where orchards and hop gardens, barley, wheat and maize, sugar-beet and tobacco are grown. The sides of the Black Forest and the Vosges, and their northern continuations, rise steeply from the floor of the valley. The Vosges are cut by somewhat broader lateral valleys than are those of the Black Forest and consequently they are the more easily approached. The terraced hillsides of these uplands are clothed with

vineyards where the vines are carefully pruned and staked. Above the vineyards are forests with upland pastures on the higher slopes, and in the clearings of the bleaker uplands rye, oats and potatoes are the chief crops. Here the farms and villages lie far apart. "One structure serves to house a farm's whole population. With a fine economy of space the commodious dwellings are arranged to accommodate the family in the front and the domestic animals in the rear. . . . In the remoter districts there are farmers who for years at a time do not leave the vicinity of their homesteads, which nestle comfortably among the rolling hills." There is no class distinction in the Black Forest ; among the peasants, old and young, rich and poor, all work long and hard.

Forestry, too, is important, and home industries, dependent on the woodlands, include toy and clock making, the construction of musical instruments and other skilled occupations in which the goods produced are of small bulk, but of comparatively high value. The development of water-power is tending here, as elsewhere, to revolutionise industry ; and catering for tourists is becoming more important each succeeding year.

From Mainz to Bingen the Rhine flows west at the foot of the Taunus, whose southward facing vineyards are famous for their wine. From Bingen a route leads up the Nahe Valley to Metz, an important nodal point for both roads and railways, and which was, until 1918, a German fortress town and railway junction. At Bingen the Rhine turns north and enters its picturesque gorge. The little villages often lie at the entrance to a valley, and round them terraced hillsides with their vineyards rise up from the river side ; the stone walls that mark the edges of these terraces are built as a rule in curved rather than straight lines, so helping to prevent the soil being washed

away after heavy rain, for the water tends to follow the curve of the wall rather than to pour directly over the edge. Situated on commanding spurs the grey walls of old castles overlook the busy river far below. Many of these castles are now show places visited by crowds of tourists, and some have been utilised as *Jugendherberge*, where the youth of Germany can stay for the night, in Spartan simplicity, for a small fee.

. At the junction of more important valleys stand larger towns such as Coblenz. Between this town and Bonn the gorge widens, but, though the slopes are more gradual, the scenery is still picturesque. After leaving Bonn the hills recede and the Rhine enters its lowland course.

Many of the great Rhine towns stand on the left bank of the river. Thus the ancient cities of Strasbourg (French), Mainz, Coblenz and Cologne are all situated on this western side of the river at points where routes debouch upon the plain. The reason for this is that the Rhine was the real western frontier of Roman civilisation, so that it was on this side that the Roman strongholds were established.

Strasbourg, a short distance up the Ill, was in 1919 transferred to France and as a result its German trade has, of necessity, suffered. Its command of routes early made it an important centre; westwards one route crosses the Col de Saverne to Nancy, thence through the pass of Toul, leading from the Moselle to the Meuse, and down the Valley of the Marne to its confluence with the Seine on the outskirts of Paris. This route is followed by the Orient Express from Nancy to Strasbourg, and from there to Karlsruhe; the Rhine-Marne Canal also crosses the Col de Saverne, thus forming one of the links between the Rhine and the French Canal system. A branch of the Rhône-Rhine Canal runs southwards from Stras-

bourg across the plain of Alsace to Mulhouse and then runs through the Burgundian Gate to the River Doubs. Strasbourg, in addition to possessing strategic importance,

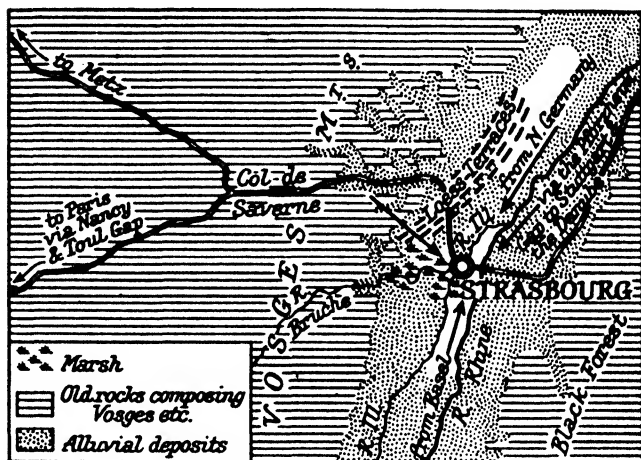


FIG. 9—THE SITE OF STRASBOURG

A route centre and river port. Situated at the confluence of the Bruche and the Ill, near the point where the latter joins the Rhine, Strasbourg commands routes not only up and down the Rhine, but also through the Col de Saverne to Paris and through the Pforzheim Gap to Stuttgart and the Danube.

is a manufacturing town making cotton and artificial silk goods.

Karlsruhe, some distance from the right bank of the Rhine, is a comparatively modern town, having been founded in the seventeenth century. It commands the eastward route through the Pforzheim Gap to the River Enz at Stuttgart. The town of *Pforzheim* is noted for its jewellery; the industry was established here by refugees who fled from France about the time of the revocation of the Edict of Nantes in 1685.

Mannheim is situated at the head of steamer navigation on the Rhine, at its confluence with the Neckar. It is the principal inland Rhine port and an important entrepôt centre for goods coming up the river through Rotterdam. It exports timber and salt from the Neckar Valley, manufactures woollens, glass and tobacco and has distilleries that utilise imported grain. *Ludwigshaven*, on the left bank of the Rhine, is noted for its chemical manufactures, the bulky raw materials for which are imported cheaply by water. At the point where the Neckar enters the plain the ancient university town of *Heidelberg* is set in picturesque surroundings along the flat strip between the river and the wooded hills.

Mainz lies opposite the point where the Main enters the Rhine. Here the south to north route, turned west by the Taunus, meets that coming down the Main. Wood from the forests is used for the manufacture of furniture, and the cattle bred on the lowland pastures provide hides for making the leather goods for which the town is a centre.

Frankfurt, as its name implies, is another ancient town. It was here that the *Franks* established a settlement by a *ford* over the Main. Though not on the Rhine itself, this town has a situation superior to Mainz. The route down the Main gives easy access to the Rhine and thence to the Nahe Valley at Bingen. One route to Hanover goes north through the fertile Wetterau Valley, with its orchards and pastures, while another follows the Kinzig and Fulda Valleys, and a branch from the latter valley goes by way of Erfurt to Leipzig. All these routes are followed by railways. At one time Frankfurt was the most important banking centre in Germany, but in this respect it has now been eclipsed by Berlin.

Two natural ways converge on the Rhine at *Coblenz*: that down the Moselle from the south-west and that down

the Lahn, a little north of the town, from the east. Because of the sinuous nature of its course the former valley does not provide so good a route as would at first appear, and navigation on this stream is frequently interrupted owing to the lowness of the water. A bridge of boats, still used

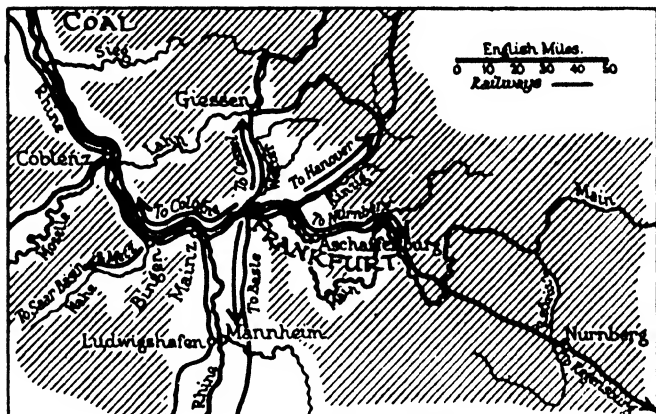


FIG. 10—THE SITE OF FRANKFURT-ON-MAIN

to cross the river at this point, leads to the towering rock on which the former fortress of Ehrenbreitstein stands in a commanding position.

Some idea of the winding nature of the Moselle may be gathered from the fact that, though *Trier* (*Trèves*) is only some 60 miles in a direct line from Coblenz, yet the distance by river is 110 miles. *Trier* was founded by the Keltic tribe of the *Treveri* and later it was a Roman centre. Situated at a point where the Moselle widens it stands near the confluence of this river with the *Sauer* and the *Saar*. The route up the latter valley leads to that from *Bingen*, by the *Nahe Valley* to *Metz*.

Between Coblenz and Cologne no large towns are situated on the Rhine, though the university town of Bonn, at the end of the Gorge, lies opposite the confluence of the Sieg, which thus provides an easterly route between the uplands of Sauerland and the Westerwald.

8. THE TOWNS OF THE CENTRAL UPLANDS

By the eastward routes that have already been mentioned the great south to north Rhine highway is connected with a network of devious ways that cross the Central Uplands. Though none of the streams, except those that have been canalised, form navigable waterways, yet their winding valleys are important, as they direct the means of communication. Such towns as Stuttgart, Nürnberg and Fürth, Würzburg and Regensburg are nodal points forming a focus of routes.

The railway from Karlsruhe to Stuttgart forms a link in the shortest line that connects the Rhine and the Danube valleys. From the latter town the line ascends the Neckar and the Fils valleys, reaching the Danube at Ulm. Thence it crosses the Alpine Foreland, passing through Augsburg and Munich, to Vienna. Much through traffic between Paris and Vienna utilises this route. A north to south route that connects the industrial north of Germany with Switzerland also runs through Stuttgart. From Frankfurt one line to the latter town runs through Heidelberg and Bruchsal, and another follows the Neckar Valley passing through Heilbronn. From Stuttgart the railway continues to follow the Upper Neckar, crossing the Upper Danube and the Rhine, west of Lake Constance. One branch continues south to Zurich and the St. Gotthard line, while another turns east, forming part of the railway that runs by way of the Arlberg Tunnel and the Inn Thal to Innsbruck. Another line runs from

Heilbronn to the junction of Crailsheim, whence one portion runs through Nordlingen to the Danube at Donauwörth; the other continuing east to Nürnberg.

Situated on the Pegnitz, a tributary of the Regnitz, *Nürnberg* has been an important centre since mediæval times. It was founded in the eleventh century and its command of routes caused it to grow in importance until it became the chief German industrial centre of the Middle Ages, ranking as a "Free Imperial Town." The inherited skill and the traditions handed down from its early craftsmen have played no small part in the modern industrial centre which it has become. Like other manufacturing towns in central Germany it specialises in goods of high value and small bulk. Thus it is noted for its electrical apparatus, its glass and toys. Standing adjacent to a hop growing area it is a hop market and a brewing town, and like many other industrial centres situated in a farming area it also makes agricultural machinery. Though Nürnberg is thus a modern manufacturing town, it still preserves much of its old-world character: the older part of the city is encircled by its ancient walls, and its quaint old market-place, surrounded by mediæval houses, and its magnificent churches lend it a charm that few cities possess. On this nodal point routes converge from Cologne by way of the Rhine, Frankfurt and Würzburg; from Hanover via the Leine and Werra valleys through Bamberg; from Berlin by way of Halle or Leipzig and thence to Plauen and across Vogtland to Hof, on the Upper Saale, and thence through Bayreuth; from Magdeburg and the Elbe through Plauen; from Prague and Pilsen over the Böhmer Wald to Fürth and then down the Cham Valley to Amberg; from the Danube at Regensburg and Donauwörth, and from Stuttgart.

The Ruhr district forms one of the greatest points of

converging railways in the whole country. Of these the line running east across the northern part of the Central Uplands links this region with Cassel (on the Fulda), Erfurt and Leipzig. *Erfurt* is the chief town of Thuringia, and beside being a nodal point it is the centre for the rich cattle, grain- and vine-growing districts that lie in the valleys of the Saale and Unstrut.

CHAPTER IX

THE NORTH GERMAN PLAIN

1. GENERAL CHARACTERISTICS

OF the three main parts into which Germany may be divided the Northern Plain is by far the most homogeneous. Stretching as it does from the Central Uplands to the shores of the Baltic and North Seas it forms one of the most important portions of the great European Plain which spreads from northern France eastwards through the Netherlands, Germany and Poland and across the west of Russia to the Urals.

West of the Elbe the elongated, low, dune-fringed Frisian Islands run parallel to the mainland, from which they are separated by a narrow zone of sea that may be regarded as corresponding to the enclosed shallow lagoons, *wadden*, which lie behind the protecting sand dunes of the coast of Holland. Beyond the mud flats the surface of this part of the German plain is covered with marsh and heath, and plentifully besprinkled with ponds and lakes, though vast areas have now been reclaimed by the industry and ingenuity of man.

East of the Elbe a belt of morainic lakes stretches from the beautiful wooded lake region of Mecklenburg, through Pomerania, to the Masurian Lakes of East Prussia. In this eastern portion the soil is more sandy: the infertile morainic ridges separate the broad original river valleys, the *talungen*, which are often covered with

alluvium, and these, together with the monotonous stretches of flat land, form the characteristic features of this northern region.

Across the sandy surface straight, hedgeless roads, crossing the brown wind-swept fields, link the straggling villages. Still farther east the villages grow fewer, for here is the region of the large estate and the big land-owner: the low rambling farm buildings are grouped round a square and beyond them cluster the houses of the peasants. In some respects these farms remind one of those of the Brie district, in the Paris Basin, though their aspect is somewhat colder and bleaker.

The plain of northern Saxony, stretching from the Elbe to the Spree, is chiefly covered with heath and pine woods. It is a thinly peopled area where some sheep-rearing is carried on, but the recent discovery of lignite deposits around Seftenberg, which lies in South Prussia just over the Saxon border, is gradually changing the character of this part of the district.

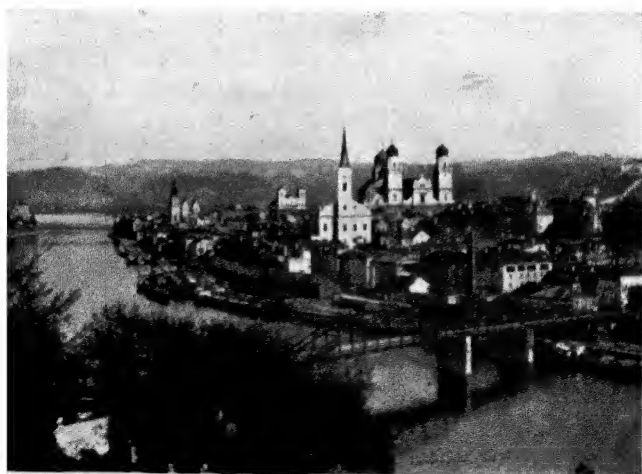
The main rivers, the Vistula, the Oder and the Elbe flow from south-east to north-west across the lowland, cutting their way through the low east to west ridges: their tributaries, and smaller streams such as the Weser, Hunte and Ems, help to complete the system of waterways which spread like a net across the plain. The principal rivers are navigable throughout the year: they are highest in spring, when they become filled with the waters from the melting snows, and lowest in summer because, although this is a rainy season, their volume is diminished, both on account of the increased evaporation and because of the growth of vegetation, which thus reduces the supply of water available to swell the streams from the surrounding country.

The Rhine and, to a lesser extent, the Danube have two

PLATE V



LOCK NEAR HOLTENAU ON THE RHEIN CANAL



PASSAU AT THE CONFLUENCE OF THE DANUBE AND THE INN

maximum high-water periods : their tributaries from the Central Uplands cause them to rise in spring, but they attain a second zenith in summer. The reason for this is that the snows on the high Alps do not melt until the summer and this season is also one of extremely heavy rainfall in these Alpine regions.

This summer maximum is very marked in the upper portion of the Rhine and it thus enables navigation to be carried on at a season when in these portions of its course there would not otherwise be sufficient depth of water for transport.

Such water transport is especially important in Germany. The Rhine is, of course, the chief waterway, but the Elbe, the Oder and the Vistula also provide valuable means of communication.

The widespread river system has been linked by canals that facilitate west to east communications. The presence of the *talungen*, east of the Elbe, has assisted their construction in this region, and, incidentally, the canals have helped to drain the areas through which they flow, so that land, once marshy and covered with undergrowth, is now available for agricultural purposes. With increasing economic expansion, south to north canals were later constructed, to provide direct links with the Baltic and North Sea ports.

It must not be forgotten that in both France and Germany the amount of inland water-born transport is very much greater than it is in the British Isles. Owing to the fact that the Rhine enters the North Sea through Holland a number of canals have been made to provide outlets to the sea through German territory. Thus the Dortmund-Ems Canal connects the Rhine with the North Sea at Emden, while the *Mittelland* Canal links it with the Weser : at the time of writing, the latter canal, which at

present reaches well to the east of Hanover, is being extended to link the Rhine with the Elbe.

The Elbe itself is navigable as far as Prague (on its tributary the Vltava), the capital of Czechoslovakia, and the value of this river as a waterway is greatly enhanced by its supplementary canal system. Not only is its estuary linked with the Baltic by the Kiel Canal, but the construction of the Elbe-Trave Canal has done much to stimulate trade between the Elbe and Baltic ports. As early as 1890-98 the merchants of Lübeck, at the northern end of the present canal, constructed a waterway to connect their town with the Elbe, and even to-day much of the Baltic coastal trade with Western Germany passes through this ancient port.

Numerous canals link Berlin with the Elbe, the Oder and the Baltic. The *Havellandischer* and the Plauer Canals join it to the Elbe, and the Finow and Oder-Spree Canals unite it with the Oder. Northwards the Grand Shipping Canal (*Grosseschiffahrtsweg*) forms a waterway from the capital to the port of Stettin.

The Bromberg Canal links the Oder and the Vistula. In East Prussia the Königsberg Ship Canal joins that town to the Baltic, while the Masurian Canal forms a route to the interior, uniting, as it does, the Pregel and its tributary the Alle with the Mauer See and the Spirding See.

The main factors that have influenced the chief lines of communication and the position of the towns are :—

- (1) The south to north-east direction of the principal rivers.
- (2) The west to east direction of the *talungen* east of the Elbe.
- (3) The points where routes from the Central Uplands, mainly south to north, debouch upon the lowlands.

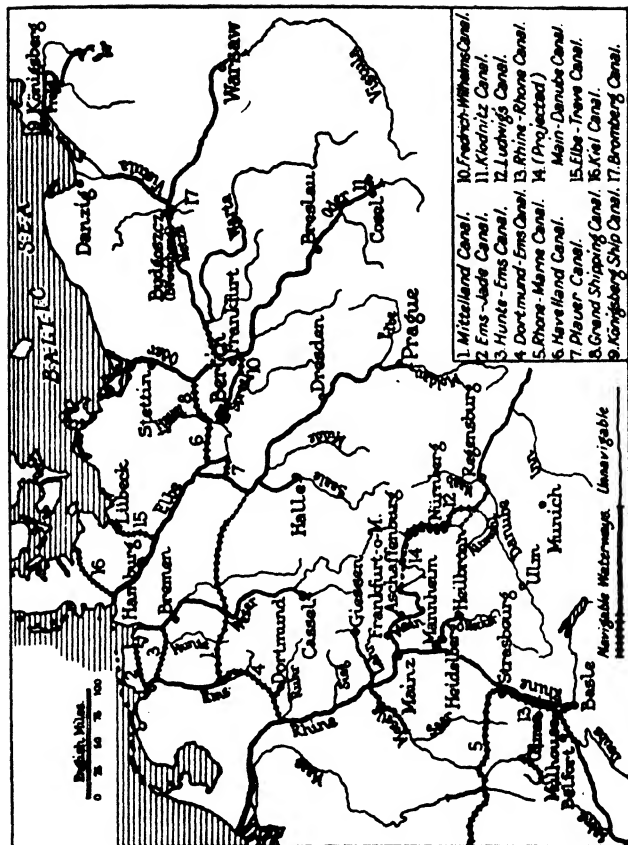


FIG 11—THE NAVIGABLE WATERWAYS OF GERMANY

To these must be added such modern factors as the position of the minerals, especially coal, and the importance of the North Sea coast as compared with that of the Baltic : thus the principal ports at the present time are Hamburg and Bremen, whereas in the Middle Ages it was Lübeck that was the chief maritime centre.

2. THE " BAYS "

Along the southern edge of the Plain a series of " bays " extends into the mountains. At the point where the Rhine leaves its gorge and enters the lowland is the " bay " of Cologne, bounded by the Ardennes and the Uplands of Sauerland. Beyond stretches the broad " bay " of Munster whose eastern edge is formed by the Teutoburger Wald—a series of ridges that thrust themselves in a north-west direction into the plain, looking down upon the valley of the Ems. East of the Harz, where the Saale and Elster, the Elbe and Mulde, reach the lowland, is the Halle-Leipzig " bay " ; and still farther eastwards the long narrow " bay " of Breslau, drained by the Oder, forms a lowland wedge between the surrounding uplands.

And along the northern foot of the Central Uplands runs an important west to east route that links the nodal points that lie in the " bays."

Cologne, the third town in Germany, is placed where roads and railways, coming from the south, and hitherto confined within the narrow passage of the gorge, are free to spread out, fanlike, across the lowlands. From the west the route from northern France and Belgium skirts the foot of the Ardennes and, crossing the Rhine at Cologne, makes for northern Germany. From early times there was a crossing-place of the Rhine here, and when Cologne was a Roman centre Constantine the Great built a stone bridge connecting the two banks with

an island that now forms part of the mainland. This bridge was still standing in the time of Charlemagne, but it was destroyed later by the Northmen. In the Middle Ages Cologne was not only a commercial, but also an ecclesiastical centre, as its magnificent cathedral bears witness.

Ocean-going steamers can ascend the Rhine as far as Cologne, which marks the limit between sea and river shipping: it is a place of trans-shipment from sea to river and from water to land. To the north, within easy access, lies the Ruhr Coalfield, the greatest industrial area in Germany. The strategic importance of Cologne is shown by the fact that it was, until 1918, one of the chief of the Rhine fortress towns.

On the western side of the "bay," some forty miles from Cologne, is *Aachen* (Aix-la-Chapelle), Charlemagne's northern capital. Standing on a small coal and iron field, it is an important woollen manufacturing centre. *Düsseldorf* and *Duisburg* are river ports on the Rhine: the former is noted for its dyeing industries and the latter, situated 87 miles north of Cologne, at the point where the Rhine is joined by the Ruhr, is the port for the industrial region centring round the latter river.

To the north-east of the Rhine the "bay" of Munster is an agricultural district of which the ancient town of *Munster* forms the centre.

Halle and Leipzig are the two principal towns in the "bay" that lies to the east of the Harz Mountains and though this district is divided politically between Thuringia and Saxony, it forms a natural unit and the presence of lignite and potash salts has done much to weld it into one economic whole. The lack of navigable waterways hastened the construction of the numerous railways that cover the "bay."

The south and north routes running down the Saale, the Elster and the Elbe here meet the west to east route that runs along the foot of the Uplands.

Halle, on the Saale, is a railway centre and manufacturing town, but its importance is overshadowed by that

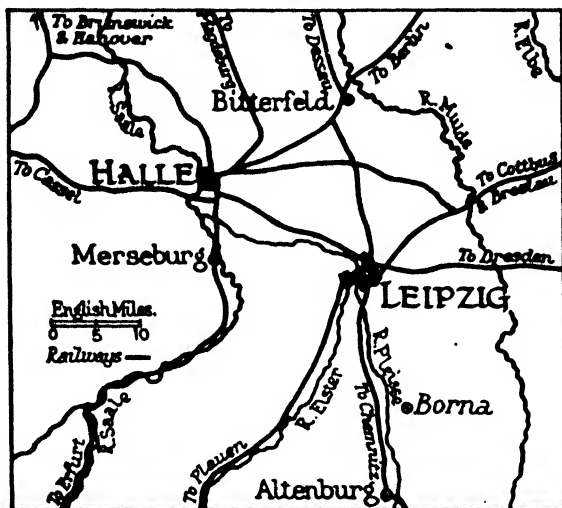


FIG. 12—THE SITES OF LEIPZIG AND HALLE

of Leipzig. Situated at the confluence of the Elster and the Pleisse, *Leipzig* forms one of the chief inland trading cities of the country, and not only is it the centre of the German book trade, but to the annual fair come merchants from all parts of Europe and continents even farther afield. Around both these towns lie rings of satellite towns which tend, as in the case of the Lancashire cotton towns, to specialise in some particular branch of industry. Broadly speaking the west side of the "bay" is industrial

and the east side is agricultural, though Borna, in the loess area to the south of Leipzig, is noted for its market gardens.

Dresden, the capital of Saxony, though not, strictly speaking, a city of the plain, lies where the valley of the Elbe broadens out. Southward the way leads to Prague; north-west a route runs down the Elbe to the great seaport of Hamburg; from the west comes the way from Leipzig, and to the east goes that to Breslau. Situated on both banks of the Elbe, this beautiful city is famed for its artistic treasures and is an intellectual and musical centre. It is also a busy manufacturing town specialising in toilet preparations, the making of cigarettes, photographic apparatus and other light goods. The celebrated "Dresden" china is manufactured at the quaint old town of Meissen some dozen miles distant.

The long, narrow "bay" of Silesia is divided into Lower, Central and Upper Silesia. The first of these three divisions is a land of heaths and moors. Here, in such a region as the Liegnitz Forest, sheep rearing is the chief occupation, and Görlitz, on the Neise, is noted for the excellence of its woollen goods. The loess lands that lie around the Katzbach river provide good agricultural land where wheat and root crops are grown.

Breslau, the capital of the province and the seventh town in Germany, arose as a bridge-town at the crossing-place of the routes down the Oder and the west to east ways. The main railway line from Berlin to Cracow, Leimbürg and Odessa runs through Breslau and Cosel. The Oder is navigable above Breslau as far as Cosel, which is the the seventh inland port of Germany. From there a canal runs east into the heart of industrial Upper Silesia. The loss of the greater part of this region to Poland inflicted a great blow on German industry—a blow from

which it is doubtful if German Upper Silesia will ever recover.

3. THE COASTAL REGIONS

Along the North Sea coast itself there are no large ports: Emden and Wilhelmshaven, reminders of Germany's naval ambition, Bremerhaven, the outport for

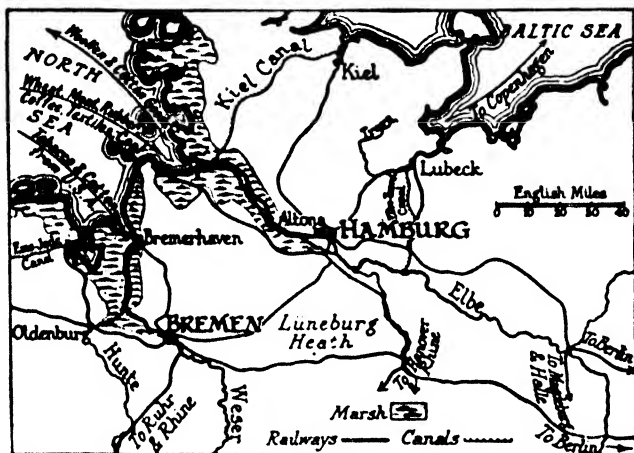


FIG. 13—THE SITES OF HAMBURG AND BREMEN

Bremen, and Cuxhaven are all comparatively small towns. The islands off the coast and many of the fishing villages are watering-places, for here the air is bracing and the climate equable.

Hamburg, the second town in Germany, is situated at the head of tidal navigation on the Elbe, and *Bremen* lies some 60 miles up the Weser estuary. Neither of these ports is frozen in winter, though ice-breakers have to be used to keep the harbour of Hamburg open. Ham-

burg and Bremen were two of the lesser Hanse towns, but their prosperity has increased in modern times, for, facing as they do the North Sea, the world is their market and the whole of Germany their hinterland. Like Bristol, they have, despite their modern industrial activities, managed to preserve in some measure their mediæval spirit. Bremen imports cotton, and both towns in addition to their entrepôt trade are industrial centres, for by manufacturing the imported raw materials at the port of landing, further cost of transport is saved. They have, in addition, a Baltic trade through the Kiel Canal.

Hamburg has an extensive trade with the United States and its excellent system of inland water communications enables it to forward goods at cheap rates to all parts of Germany. Adjoining the "Free City" of Hamburg is the Prussian town of Altona—a town that lacks the charm of its more ancient neighbour.

Amongst the factors that assisted the growth of the Baltic ports in the Middle Ages was the difficulty of land communication from west to east. Consequently the more important ports arose at or near the mouths of navigable rivers which provided them with their hinterlands. For instance, Stettin sprang up at the mouth of the Oder, Danzig at that of the Vistula, and Königsberg was the port for the Pregel. Lübeck, still the most important German Baltic port, grew up around the estuary of the comparatively insignificant Trave, but the Elbe Valley provided its hinterland and from quite early times it was connected by canal with this river.

Stettin lies at the point where the Oder begins to broaden. Much of the trade from Upper Silesia passes through this town and its outport of Swinemünde, which lies on the seaward side of the islands that almost enclose the Oder Haff. The construction of the Grand Shipping

Canal, between Berlin and the Oder at Stettin, has made the latter town the port for the capital and has greatly increased its trade. *Königsberg* and its outport of Pillau have a considerable coastal trade and export timber and grain from the Pregel Valley and from East Prussia.

4. THE CENTRAL PORTION OF THE PLAIN

Between the coastal lands and the busy industrial areas of the "bays" and the Ruhr spreads the central portion of the German Plain. Politically most of this region belongs to Prussia, which is the largest state in Germany, stretching, as it does, from the western frontier to the Polish border. The nucleus of Prussia and of the Plain itself is Brandenburg, lying between the Elbe on the west and the Oder on the east. In the centre of Brandenburg is situated the enormous city that is Germany's capital.

In essence *Berlin* is a modern city: it is in a very different category from those great historic capitals of Europe—Rome, Paris, London and Vienna; or even from such cities as Cologne, Frankfurt-on-Main, Aachen (Aix-la-Chapelle) and Augsburg, whose roots are buried in the historic past. And yet, with the single exception of London, it has the greatest population of them all.

Berlin is first mentioned in the thirteenth century, though it probably dates back to an earlier period. It originally arose as a settlement of fisher folk on an island in the Spree and this little settlement grew; for here the banks of the river were high and it was a place easy to defend. This crossing-place of the River Spree was bridged in quite early times: it lies equidistant from two of the few easy crossing-places—an easterly one at Kopernick and a westerly one at Spandau.

The Spree-Havel Valley occupies the broad original

valley of the Oder, which is bounded on the north and south by morainic ridges that rise to a height of several hundred feet. In more recent times, when swamps and marshes had been drained, this depression naturally became a focus for the west to east routes across the plain, though in early centuries these same swamps and marshes provided a natural means of defence.

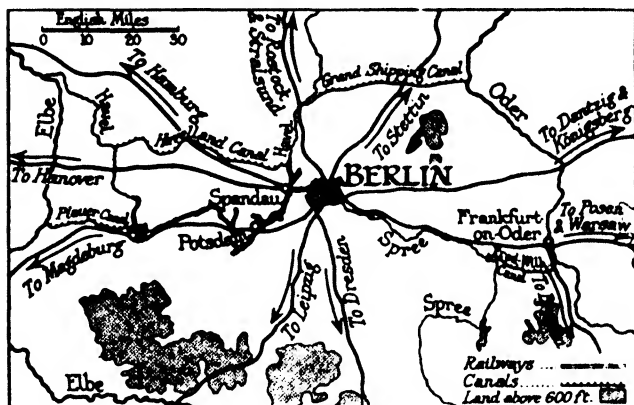


FIG. 14—THE SITE OF BERLIN

By the fourteenth century Berlin was the head of a confederation of towns. In 1448 Frederick of Hohen-zollern built a castle here and thirty-eight years later the town became the capital of Brandenburg, but, though it continued to increase in importance, it still remained a relatively small town until the end of the Thirty Years' War in 1648. At that time it had a population of 6,000, while London and Paris both had well over half a million inhabitants. During the next century the influence of Brandenburg and its capital, Berlin, grew apace: fresh

territories were added and Prussia (as the extended Brandenburg was now called) became the leading state in Germany. Its premier position was recognised by the other states, after the conclusion of the Franco-Prussian War in 1871, when the King of Prussia became Emperor of Germany. Soon after this the number of inhabitants in Berlin numbered about a million and from this time onwards it grew rapidly until, at the present time, its population is well over four millions.

Lying, as it does, in the centre of the plain, midway between the Central Uplands and the sea, it has become a great route centre. The Baltic port of Stettin is 70 miles distant, and Hamburg, the greatest port in Germany, is but 160 miles away. Here, too, routes from Warsaw, Breslau, Vienna, Dresden, Leipzig, Halle and Hanover meet. Navigable rivers and canals provide cheap water transport to all parts of the Empire and Berlin is now the largest inland port in Germany. Roads and railways link it with every part of the Continent, while airways provide speedy communication with many of the great cities both of Germany and Europe. Berlin is also the greatest manufacturing centre in Germany, though its industries, like those of London or Paris, are almost too many to enumerate.

And yet this enormous city does not reflect the German spirit in the same way that Paris may be said to be a mirror of French life, or that London is typical of Britain: its cathedral lacks the dignity of Notre Dame or Westminster Abbey; the Reichstag, standing in solitary state in its park, has not the atmosphere of the Houses of Parliament set alongside the Thames: the Friedrichstrasse cannot compare with the Kartnerstrasse of Vienna, nor the Unter den Linden with the Avenue of the Champs Elysées in Paris, and there is no square to equal the

splendid space of the Place de la Concorde in the latter city. None the less, it is the world's third largest town ; it has two millions more inhabitants than Paris, is more than double the size of Vienna, and over four times that of Rome. It is probably the most cosmopolitan city in Europe—an international rather than a national centre.

Beyond the city are market gardens and orchards, plough land and meadow and, though much of the forest has been cut down, pine woods, lakes and stretches of sandy heath are still typical of Brandenburg.

To the south-west *Magdeburg* lies in the centre of a somewhat more fertile region ; for here the loess offers a good soil for wheat and sugar-beet and the rich potash deposits of Strassfurt provide the necessary fertilisers. The Saxon and Silesian Coalfields supply Berlin with much of her coal, but though Saxony is nearer, coal can be more easily and cheaply conveyed by water transport from Silesia.

PART II

CHAPTER X

RACES

1. EARLY DISTRIBUTION AND IMMIGRATION

IT would be of little profit to attempt to study the distribution of man in Europe before the close of the Ice Age, but after the retreat of the Ice Sheet a steadily increasing area became suitable for habitation.

During the Palaeolithic Age several distinct physical types were found in Europe. Skeletons found at Grimaldi show features akin to the negroid races of Africa, while another type with deep-set eyes, protruding upper jaw and broad nose has been found at Brunn and other places. The Cromagnon man, tall, long-headed with narrow nose and pronounced jaw and cheek bones, presents a third type. Yet, though little is definitely known of these earliest men, they, too, were factors in the evolution of the European races.

It was not, however, until the close of the Palaeolithic era that the real forbears of the present Europeans began to appear. During Neolithic times branches of the Mediterranean race spread through the south-west of the continent. Some anthropologists think that these Mediterranean peoples, long-headed, dark-skinned and of small stature, came from Africa before the separation of the two continents and at the time when the Mediterranean consisted of two separate basins.

A study of the map of Europe shows that the Danube forms a natural route from the Black Sea into the heart of Central Europe. It was probably along this route

that many of the successive waves of broad-headed migrating peoples travelled. These race movements were, in the main, very gradual and were spread over considerable periods of time. The majority of the tribes came from the uplands of Asia : they followed the setting sun and in their migrations tended to travel along parallels of latitude and so to remain in a somewhat similar climatic zone throughout their wanderings. These peoples spread westwards across the upland belt of Central Europe. This Alpine¹ race was composed of tall and short stocks with broad heads, straight brown or black hair and dark brown or grey eyes. Thus these Alpine broad-heads formed a dividing group between the long-headed Mediterranean races and other long-headed peoples who were settled in the lands around the Baltic Sea. The Nordic² peoples who inhabited this latter region were a tall, fair-haired folk.

¹ *Alpine race.* As the ice and snow retreated a broad-headed, dark-haired type spread in the mountain zone, south of the region of the Northern Steppe-folk. "Those in the west are somewhat short in stature and of thick-set build, while those in the Illyrian portion of the Balkan Peninsula and in Asia Minor are tall, with projecting noses and very high heads ; the latter are frequently called Armenoid. . . . The chief discoveries which led to a settled life (probably in the Upper Valley of the Euphrates) were made by members of the Eastern Alpine or Armenoid race as they came into contact with the members of the Southern Steppe-folk just south of the mountain zone." (See *Peasants and Potters* : Peake and Fleure. Students are recommended to read this book.)

² *Nordic race.* Professor Fleure suggests that with the retreat of the Northern Ice-Cap in Pleistocene times, the Sahara, which had formerly been a well-watered steppe, grew drier, causing a migration of animals and hunters. Some of these long-headed, dark-haired people of medium stature moved north and east over the open loess lands and mingled with the inhabitants of the Russian and Turkestan steppes. From this combination (termed the Northern Steppe-folk) probably sprang the ancestors of the Nordic Race. A later north-west spread of these people brought them to the Baltic lands, where conditions discouraged the development of pigment in the skin, hair and eyes, thus accounting for the existing physical characteristics of the Nordic Race, viz., colouring fair, eyes blue or grey.

The Alpine stock mingled with both the Mediterranean and the Nordic races, but especially with the latter, for the transition from the Central Uplands to the Northern Plain is more gradual. Here, too, the treeless loess belt was not only early settled by man, but also formed an easy route for migratory peoples.

Along the North German Plain there was considerable intermixture of races, and thus there rose up a virile stock, in which the broad-head of the Alpine stock predominated, but whose colouring, like the Nordic strain, was fair. In modern times the discovery of coal, with the consequent influx of cosmopolitan population, has tended to modify very greatly the original Alpine-Nordic stock.

2. SLAV INVASIONS AND THE CONSOLIDATION OF THE GERMANIC TRIBES

In the centuries immediately preceding the Christian era, and in the earlier part of that era itself, the Germanic tribes appear to have occupied most of the land between the Vistula on the east and the Rhine on the west, and they stretched from the shores of the North and Baltic Seas to the banks of the Danube. Later, owing to pressure from the advancing Slavonic peoples, they retreated behind the line of the Elbe and the Saale. These German tribes in their turn exerted pressure on the Alpine peoples, forcing them across the Rhine until they were stopped ultimately by the Roman power which, from the time of Julius Cæsar, made the Rhine the eastern frontier of Gaul.

Gradually the German tribes united to form confederations: the Saxons occupied the land between the Elbe and the Rhine, the Frisians the North Sea coast and the islands, the Thuringians the forested uplands of Central Germany, the Franks the valleys of the middle and lower Rhine and its tributaries the Main and the Moselle, later

spreading to the valley of the Meuse, the Alemanns (Swabians) the area lying between the Black Forest and the Vosges, and the Bavarians the region to the east. During the fourth and fifth centuries A.D. the strength of Rome was rapidly declining and the latter century witnessed the destruction of her power in western Germany : thus the Alemanns were able to occupy the basin of the upper Danube as far as the river Lech, and the Bavarians a part of this basin including the valleys of the Isar and the Inn. Meanwhile the Franks advanced from the Meuse, overran the Paris basin and ultimately occupied the whole of Gaul.

As a result of these west and south movements, the German peoples had weakened their hold on the Northern Plain and there was but ineffective opposition to the advance of the Slavs from the east. During the following centuries, however, the Germans strengthened their position, and from the tenth century they gradually advanced from the Elbe-Saale eastwards, and re-colonised the Plain. By the thirteenth century they were established behind the Oder, whence they advanced up the valley of this river and eastwards along the coast, while the Slavonic tribes continued to occupy the basin of the Vistula. Thus near the mouth of the latter river the two races met. The German re-conquest of this region resulted in the Germanisation of its Slav population and produced to some extent a mixture of German and Slav stocks. Along the eastern frontier of Prussia the Slav strain is very marked even to-day.

The Slavs also penetrated up the Vistula to its source and established themselves in Bohemia, where the enclosing mountains of the "Diamond" enabled the Slavonic Czechs to withstand German influence, though there was a certain infiltration of it.

Her position between Germany on the west and Russia on the east makes Poland a transition region, and her boundaries, when compared with those of Bohemia, are ill-defined. But the fact that the Slav strain is so definite and persistent in Poland shows that the frontiers of this state are more strongly marked than a cursory examination would lead one to suppose.

The former valley of the Vistula (see p. 28), now followed by the tributary Netze and the lower Warta, roughly marks the zone between the German and Slav, for in early times the marshes around these streams formed natural zones of demarcation.

8. RACIAL TYPES IN MODERN GERMANY

The modern Germans are, as we have seen, like the British and French, a mixed race, evolved from a number of stocks, and it is to-day difficult to single out any special region as being peopled by a definitely Germanic type. Two regions may, however, be mentioned. In the lower portion of the Elbe Valley the people are, in the main, long-headed, tall of stature and fair-haired—the type one usually regards as German. Some of the purest German blood is probably found among the Frisians, for they have, until comparatively recent times, been isolated by marsh and swamp and so have tended to preserve their stock from alien influences.

The main branch of the Saxons extends from Westphalia eastwards towards the Elbe. It may be mentioned that, as the Elbe Valley is ascended the people gradually become more brunette in appearance, owing to the Slav mixture filtering down from the uplands of Bohemia.

The Thūringians have tended, in some measure, to preserve their Germanic strain intact, for Thūringia

long lay outside the main east to west migratory stream, and the tribes that settled here, amidst its gentle hills and valleys, have thus been little subjected to outside influences.

The Franks are still found throughout the valleys of the Rhine and its tributaries the Main and the Moselle, but they have also spread into many parts of southern and central Germany and the Bavarians occupy the whole of the upper Danube basin east of the Lech, being closely akin to the neighbouring Austrians.

The varied nature of Germany lends itself to subdivisions, and though actual tribal boundaries are, at the present time, somewhat vague, and though the War of 1914 to 1918 did much to develop a German national outlook, yet a definite tribal spirit is a marked feature of the German peoples. As an illustration of this, even in the early part of this century there were in the various States over a hundred kinds of national dress.

Though one speaks of Prussians yet the term *Prussianism* represents a military code rather than the tribal spirit and a number of racial types are included in this Prussia.

However, despite the strong local patriotism that permeates the country a unity has been evolved—a unity that embraces all the German peoples, including even those beyond its borders in the adjacent Republic of Austria—a unity which has proved a very potent factor in building up the powerful national feeling that is so marked in the Germany of to-day

CHAPTER XI

SOME GEOGRAPHICAL ASPECTS OF GERMAN HISTORY

1. THE RISE AND FALL OF THE CAROLINGIAN EMPIRE

TOWARDS the end of the third century A.D. the Romans were still in possession of the left bank of the Rhine below its confluence with the Main. The Franks, however, occupied the uplands on the right bank of the stream, north of the Main Valley, and also a strip of the southern portion of the plain lying beyond this bank of the Rhine. Between the Frankish territories and the Elbe were the regions occupied by Saxon tribes. It is not, however, improbable that at one time Teutonic peoples were spread throughout most of the area between the Elbe and the Vistula. The low-lying coastal lands and the islands to the north of the Scheldt were inhabited by Frisians : safe in their island homes and protected by their encircling marsh lands these people long preserved their independence ; and the constant struggle that they waged against the sea helped to develop in them a strong spirit of perseverance. In A.D. 213 the Alemanns (Swabians) broke across the middle Rhine and in the third century held both banks of the river south of the Main Valley, and on the west their territories stretched as far as the eastern slopes of the Vosges.

Of all the tribes that overran the Roman Empire during the early centuries of our era, the Franks were the most virile. Gradually, probably owing to pressure from their Saxon kindred, they extended westwards.

The Saxons, in their turn, had been obliged to yield before similar pressure from the hordes of Slavonic tribes, advancing from the great plain that stretched away to the east. By the fourth century Frankish settlements were firmly established in what is now Belgium, for in

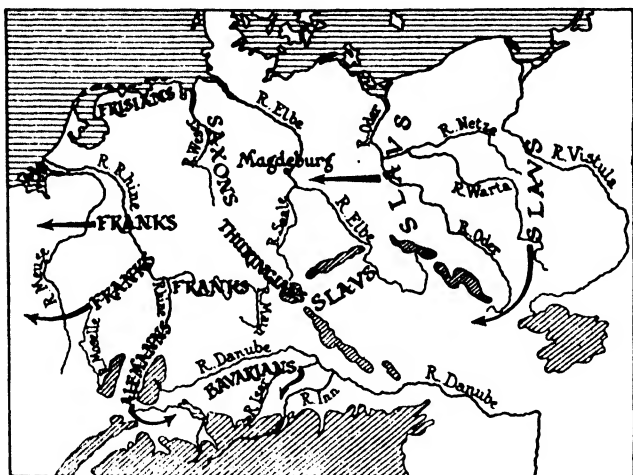
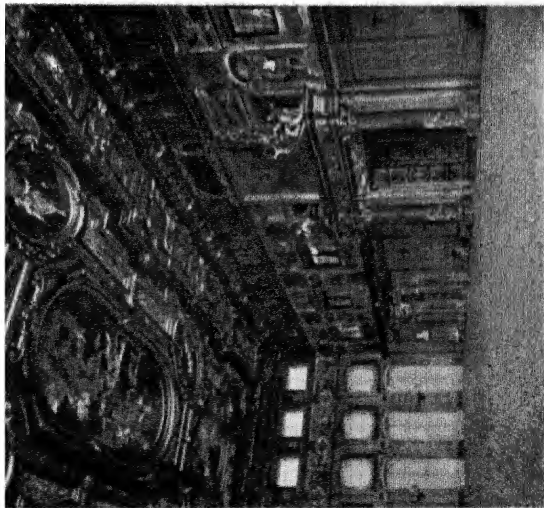
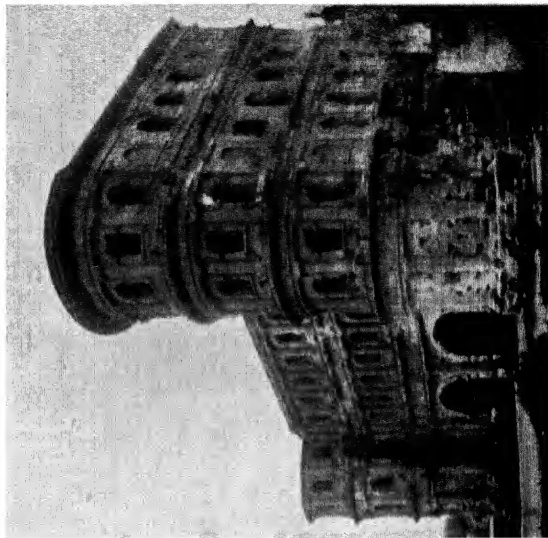


FIG. 15—DISTRIBUTION OF THE GERMAN TRIBES IN THE
EARLY CENTURIES OF THE CHRISTIAN ERA

this region the Roman power was rapidly on the wane. A hundred years later the Franks had finally dispossessed the Romans of Cologne and of the district between the Rhine and the Meuse as far south as a line running roughly from Mainz, through Trier on the Moselle, to Verdun on the Meuse. From this region they spread farther west into the Paris Basin, and south into the Rhine Valley, where they conquered the Alemanns who



THE GOLDEN HALL IN THE RATHAUS, AUGSBURG
Reminiscent of the Civic Splendours of Medieval Germany.



THE PORTA NIGRA : TRIER

inhabited that district. From the Paris Basin the Franks spread south into the basin of the Garonne, so reaching the slopes of the Pyrenees. By the seventh century they occupied all France except the Midi. When Charlemagne came to the throne they had also secured the Rhône-Saône Valley (Burgundy), and the eastern territories of the Alemanns (Swabians) which were bounded by the river Lech on the east, and the Alps on the south.

Charlemagne moved his capital from Paris to Aachen, which was his chief headquarters from A.D. 771 to 814, and became the core of the Frankish domains. At the beginning of his reign Charlemagne exercised little power over the great plain that stretched to the east of the Rhine. But his new capital provided an excellent base for his main objective, which was to conquer the heathen Saxon tribes who occupied most of the area between the Rhine and the Elbe.

Aachen was better placed for Charlemagne's purpose than was Cologne. The latter lay too near the outposts of the Saxons : one of their frontier tribes was settled in the Ruhr Valley, and their lands were only some forty miles distant from Cologne. On the other hand, Aachen was situated at the northern foot of the Ardennes, on the shortest route between the crossing of the Rhine at Cologne and the towns of the Paris Basin. It, therefore, lay within convenient distance of Cologne, but far enough away to be immune from sudden Saxon onslaught. It was from the main base of Aachen that Charlemagne conquered and converted the heathen Saxons. Thus did he extend his Empire across the Weser to the Elbe. But his success brought him more than lands, it gave him large supplies of man-power. Owing to his skilful diplomacy, the foundations were laid for the

subsequent welding of the Saxons with the Franks, Alemanni, Bavarians, Thuringians and other German peoples. Thus Charlemagne was a maker of the German nation.

So powerful did he become that on Christmas Day in 800



FIG. 16—THE CAROLINGIAN EMPIRE

he was crowned Emperor by Pope Leo III. His empire included the whole of France and extended over the Pyrenees to the Spanish mark; it spread from the North Sea, across the Alps, to the Plain of Lombardy and Central Italy; it included the whole of the Rhine Valley as well as the upper, and also a portion of the middle, basin of the Danube.

But the Carolingian Empire broke up soon after the death of its founder. Its disruption was due not so much

to its size as to lack of good communications between the different parts.

By the Treaty of Verdun, 843, it was partitioned. The kingdom of the West Franks became *West Francia* (France), whose eastern boundary ran approximately along a line west of the Rhône-Saône Valley and that of the Meuse and the Scheldt. The kingdom of the East Franks was, from the tenth century onwards, known to its inhabitants as *Deutschland* (Germany). The *Middle Kingdom* of Lotharingia (so called after its ruler Lothar) stretched from the lower Rhine southwards along the Meuse, the Moselle and the Rhône valleys. Thence it spread across the Alps to the plain of Lombardy and central Italy. Through this region ran the great highway from Aachen to Milan and Rome, which formed, at a time when roads were few, a most important north to south route.

This Middle Kingdom was neither wholly French nor wholly German, but was both physically and racially a mixture of both. But its life was short and by the Treaty of Mersen, 870, it was split into its natural divisions. Its southern portions became the kingdom of Arles and north Italy; its northern parts of Friesland (Holland), Upper and Lower Lotharingia (reduced to the valleys of the Meuse and Moselle), and Alsace passed to Germany. Its failure to survive was largely geographical. It was divided into diverse parts by the Vosges, the Jura, the Alps and the Appenines; it had no real natural centre, and its length was wholly disproportionate to its breadth.

From time to time various attempts were made to revive such a kingdom, but they were doomed to failure, though the present states of Belgium, the Netherlands and Luxembourg all bear witness to its desirability. If such

a buffer state could have been established, its existence would have had a profound effect upon the history of Europe. As it is, it merely provides a most interesting subject of speculation both for the geographer and the historian.

The West Franks absorbed Romance ideas. The East Franks, owing to the fact that Roman civilisation had never had a firm hold east of the Rhine and north of the Danube, and to their greater fusion with other races, remained more purely Teuton. Thus, Charlemagne's Empire, the inheritor of Roman tradition, was the mother of the great rival states that are now France and Germany—and of their age-long contest for the Middle Kingdom or its parts (e.g. Alsace-Lorraine).

2. THE HOLY ROMAN EMPIRE

By the tenth century the limits of mediæval Germany were approximately fixed. It included the valleys of the Rhine, Meuse, Moselle, Weser and the upper part of the Danube basin; the Elbe and the Bohemian Forest range marked its eastern boundary, but its western frontier was less well defined.

From the point of view of political history the most marked development was the emergence of the five tribal duchies of Saxony, Swabia, Bavaria, Lotharingia and Franconia, three of which were to furnish lines of great mediæval Emperors. Of these duchies the most important was Franconia, which may be regarded as the nucleus of mediæval Germany. It was divided into Rhenish and Eastern Franconia. The former occupied the northern part of the Rift Valley and the lower Main, stretching on the west to the uplands of the Hunsrück: the latter comprised the upper valleys of the Neckar and the Main.

Rhenish Franconia was an especially favoured region:

it had a mild and equable climate, a rich soil and a command of routes. It lay athwart the great transcontinental route leading from the Mediterranean, over the Alpine passes, across southern Germany, to the Rhine lands and western Europe, and the Baltic. On the west easy ways led to the Paris Basin. The chief of these ran through the Bungundian and Lorraine Gates, by the Nahe Valley through Metz, and north down the Rhine and through Aachen.

From the early part of the tenth century until the date of the Golden Bull¹ in 1356, no one city occupied the supreme administrative position in Rhenish Franconia, but Frankfurt-on-Main, Worms, Speyer and Mainz were the chief places at which diets were held. Frankfurt was, however, the principal centre, for it lay at the crossing place of the Main-Rhine-Nahe route and that leading from the Rift Valley northwards. Another important route ran up the fertile Wetterau Valley, and thence by a depression east of Giessen to the Fulda Valley at Cassel. This latter region was naturally associated with Frankfurt and formed a part of Rhenish Franconia.

Otho the Great (936-973)² re-established the idea of a revived Roman Empire which included Italy and the East Frankish kingdom, and from him may be said to date the Holy Roman Empire in its final form. The conception of a vast brotherhood of Western Europe, with a pope as its spiritual head and an emperor exercising theoretical suzerainty over the western peoples and actual territorial rule over Germany and Italy, had long haunted the minds of men and seriously retarded the movement

¹ The Golden Bull granted full sovereign and hereditary rights, within their territories, to seven of the most powerful provinces of Germany. Thus their collective power was greater than that of the Emperor, whose rule became merely nominal.

² Otho the Great was not crowned emperor until 962.

for national unity within its bounds. The Saxon Emperors (962 to 1024) were successful in dealing with the papacy, which stood in need of reforming measures, but their successors from Franconia (1024 to 1125) came into deadly conflict with the Hildebrandine papacy in Italy over its territorial aims, and over the question of lay investitures. The Hohenstaufens of Swabia made a last attempt to retain imperial control over Italy but were foiled by succeeding popes. From the middle of the thirteenth century imperial power in Italy was no more than a name, and the emperors turned to territorial expansion in Germany.

The artificial union between Germany and Italy was from the first doomed to failure. The inhabitants of the former never regarded the emperor as a national German monarch. They looked upon him as a man who, by virtue of his position, was bound to have interests in the southern peninsula and to sacrifice his energies to the pursuit of the chimera of world empire. So, too, the Italians never ceased to regard the emperor as little more than an uncultured barbarian, whose interference they resented and whose civilisation was alien to their own. The incompatibility of the southern and northern temperaments, largely due to geographic environment, also affected adversely the cause of unity.

But quite apart from these racial and political differences, the geographical factors that made for disunion between Italy and the Empire were overwhelming. The passes of the Alps were guarded on the east by Venice, on the west by Savoy, and this made Italian expeditions difficult for the emperors. But it was not the passes themselves that were the major difficulty, but rather the fact that the mountains were, for the most part, an infertile and sparsely peopled region, inhabited by isolated

communities living in the different valleys. If the Alps had been a rich area it is not improbable that a centrally situated capital, from which both the German and Italian territories could have been governed, might have been established here. But the nature of the region made it quite unsuitable for the seat of the capital of a great empire.

Upon Germany the direct result of the struggles between Popes and Emperors was the encouragement of feudal anarchy. German troops, which should have been used for the defence of the vulnerable eastern frontiers, were continually being utilised for Italian expeditions against the cities of northern Italy. The protection of these eastern frontiers of Germany against Slavs in the north-east, and Hungarians in Austria (the Eastern Mark), therefore devolved on those nobles whose lands marched with those of their eastern neighbours, and as a result they extended their territories and became, in many cases, extremely powerful. Lack of good communications, especially roads, and the presence of wide expanses of forest and marsh lands, also served to make the development of a strong central government more difficult. So the nobles were able to assert their independence of the Emperor, and as the hands of the latter were seldom free from Italian troubles they could, if threatened, always ally themselves with their nominal ruler's enemies.

As a result Germany became a paradise of feudalism, and the number of small states multiplied so enormously that by the eighteenth century there were no less than three hundred.

The German towns, too, were no less prone to take steps towards independence. Individual emperors encouraged their privileges in the hope of combating those of the nobility. No consistent policy was, however,

pursued in this matter, and the concessions merely served to strengthen and foster the growth of the Free Cities, with but little advantage to the emperors' powers. Whenever these towns found it necessary to resist the encroachments of neighbouring barons, they did not seek the help of their overlord, but took to forming defensive leagues of their own.

The famous Hanseatic League, whose communications were based on the facility of water transport, also serves to illustrate the importance and jealousy of the north German municipalities. The cities of the League were, however, interested primarily in their own progress, and not in the development of the North German plain which formed so important a part of their hinterland.

3. EASTWARD EXPANSION OF GERMANY

Mediæval Germany was thus faced, as we have seen, by the problem of an eastern frontier whose defence was difficult; the strengthening of this boundary, and the eastern expansion of the state, form an important chapter in German history. The Northern Plain, stretching to beyond the Vistula, and then merging into the great plains of Russia and Asia, was the highway of invasion from the east; so, too, the valley of the Danube with its lower reaches skirting the Carpathians provided a tempting route for incursions, and it was by one or other of these approaches that the barbarians who had swamped the Roman Empire came. Close upon the heels of the Teutonic tribes came the Slavonic peoples, whose frontiers in the sixth century extended from the head of the Adriatic, along the Bohemian Forest and the Erz Gebirge, and thence east of the line formed by the Saale and the Elbe as far as the coast.

From the sixth to the tenth century the Germans

consolidated their position behind the Elbe-Saale line. Meanwhile the Hungarians, those warlike nomads from the Asiatic steppes, swept up the Danube Valley and overran Germany. In 924 Henry the Fowler made a nine years' truce with the invaders, and afterwards partially broke their power. But it was Otho the Great who, in 955, defeated the Hungarians in a decisive battle on the banks of the Lech. Hungarian and Slav were driven from the basin of the upper Danube which was occupied by German tribes. But the Hungarians drove the Slavs from the great plain that is now Hungary, and became firmly established there.

The victory of Otho was the prelude to the formation of a series of frontier provinces known as *marks* or *marches* along the eastern frontier of the Empire. In the basin of the middle Danube, Austria formed the Eastern Mark for defence against the Magyars. Here Vienna was established as a German outpost, much as Aachen had been established by Charlemagne near the frontier of the Saxons.

West of Vienna the route led through the Austrian Gate, between the mountains of Bohemia and the Alps, to the upper Danube basin : eastwards the way ran down the Danube, and through the Pressburg Gap, to the Hungarian Plain. The Elbe Valley was reached over the low Moravian Heights ; the broad Moravian Gate, between the latter mountains and the Carpathians, led to the Oder Valley. It was by the latter route that the Slavs entered Bohemia from the north-east, and this route, in later centuries, was one of the principal causes that induced Austria to look towards the German Plain and the northern seaboard as an important outlet.

Behind the Elbe-Saale frontier the chief German fortress was Magdeburg, situated a little below the point

where the Saale enters the Elbe. At this place the route down the Saale Valley met the lowland way coming from the west, and running along the northern foot of the Harz Uplands. The site of Magdeburg was an excellent one. It was situated on a steep bluff which the winding Elbe had cut into the left bank of the river; on the opposite bank a strip of firm ground led to a fairly easy crossing-place of the stream, which was further facilitated by the presence of a number of islands.

At the beginning of the tenth century the Germans were so firmly established in the *Altmark*, as the region behind the Elbe-Saale line was called, that Henry the Fowler (A.D. 918) was able to adopt a forward policy. He advanced from the Altmark (which later became the nucleus of Brandenburg-Prussia) into the district lying between the Elbe and the Oder, where he established a frontier province, the *Mittelmark*, centring around the middle Spree-Havel Valley.

After the death of Otho the Great, Henry's successor, this region was temporarily occupied by the Slavs. They founded a fortress at Brandenburg, which stood at a crossing on the Spree near its confluence with the Havel. The Slavs were, however, finally driven out by Albert the Bear (A.D. 1158), who afterwards took the title of Albert of Brandenburg.

During the next century German authority was extended across the river Oder, where another frontier province, the *Neumark*, was established. Thus the principality of Brandenburg, which took its name from the town, now consisted of the *Altmark*, the *Mittelmark* and the *Neumark*. It stretched right across the middle courses of the Oder and the Elbe, and thus occupied the key position of the plain on the direct line of routes from the Central Uplands to the Baltic and the North Seas.

At the time of the accession of the Hohenzollerns in 1412 the geographic importance of the State was still based on this strategic characteristic.

In the thirteenth and fourteenth centuries the Teutonic Knights, a kind of crusading force, extended German

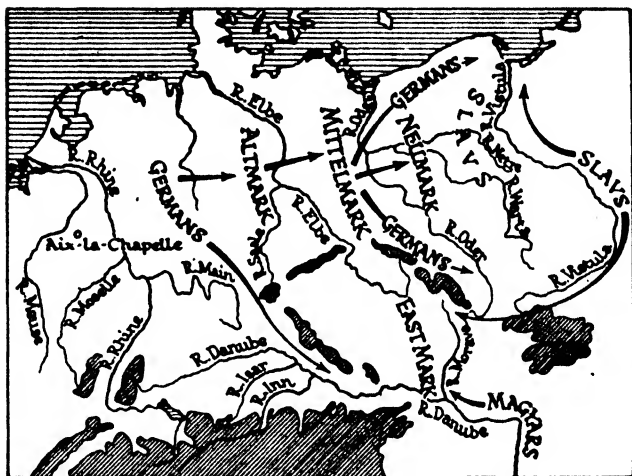


FIG. 17—THE EASTWARD EXPANSION OF THE GERMANS

power along the Baltic coast, where they held East Prussia as an outpost against the heathen Lithuanians—akin to the Slavs.

4. THE REFORMATION AND THE THIRTY YEARS' WAR

By the beginning of the sixteenth century it seemed that the failure of the Emperor to retain his hold over Italy, and the increase in the power of the Eastern Mark, called Austria, would enable the Austrian Hapsburgs to take the lead in German politics. In 1519 Charles V

of Austria was elected Emperor and ruler of the Hapsburg dominions in Germany. The spectre of another Charlemagne floated before the eyes of continental diplomatists, and Francis I of France and his successors took up the challenge.

France was able to curb Austria's ambitions. Her success, in this respect, was partially due to complications arising in Germany itself owing to the Reformation. The adoption of the Reformed faith was tantamount to open disobedience to the Emperor, but the Protestant princes of the Schmalkaldic League brought their proud overlord to his knees. The Treaty of Passau, in 1555, wrung from him the concession that every German prince might decide the form of religion to be followed in his dominions, on the principle "*cuius regio, eius religio.*" The victory was not merely a triumph for the Reformation, but a further step in the direction of independent sovereignty for the German principalities.

The general territorial effect of the Reformation in Germany was to make the north Protestant and to leave the south Catholic. Broadly speaking, the lands west of the Rhine and south of the Danube were Catholic and those to the north and east of this line were Protestant : in other words the regions which had been subjected to Roman rule remained faithful to the older faith, and those where it had never had a strong hold adopted the reformed religion. Moreover, even in the Middle Ages, there had grown up an antagonism between north and south Germany, geographical factors separating their interests, and there was something suggestive of this antagonism in the religious divisions. The northern kingdoms, from their position, were less amenable to Imperial control, and the existence of numerous scattered Catholic bishoprics tempted these northern states to

secularise and annex these lands by the adoption of the Reformed faith.

On the south-east Charles V was faced by the danger of fresh invasion. The Ottoman Turks, who had seized Constantinople in 1453, advanced into the Balkan peninsula and in 1529 actually threatened the walls of Vienna. The ultimate effect of the Mohammedan menace in Europe was to increase the Austrian territories outside the boundaries of the Empire.

The latter half of the sixteenth century was for Germany a troubled period, during which the rival religions prepared themselves for renewed conflict. Since 1555 Calvinism had been spreading in the Empire, and it was debarred from the recognition granted at Passau which only applied to Lutheranism. Thus there arose the Thirty Years' War (1618-1648) in which almost every west European nation took part for its own ends. It developed into a furious struggle between the powers of Catholic Germany, led by the Emperor of Austria and the Elector of Bavaria, and the princes of the Calvinistic League. Sweden joined the Protestant side in the hope of gaining a foothold on the southern shore of the Baltic. It must not be forgotten that at this time there were still large areas of forest and undrained lands. The struggle was, therefore, confined to the more populous areas, which thus suffered more than if the warfare had been more widely spread. Military operations finally degenerated into a war between France and Austria, and Germany was reduced to an almost depopulated waste land by the savagery of the combatants.

In 1648 the Treaty of Westphalia satisfied the claims of the Calvinists to toleration, thus making the German princes supreme in Church and State. The Emperor was

forced to cede Alsace-Lorraine to France, and the French were able to extend their boundaries, at the expense of the Holy Roman Empire, and to develop their policy of aiming at what they considered their natural eastern frontier—the Rhine. Sweden's effort were rewarded by the acquisition of Western Pomerania and the Bishoprics of Bremen and Verden, and she thus obtained her desired foothold on the Baltic coast of Germany.

After the Treaty of Westphalia, the Empire ceased to be more than a name, and the Hapsburgs turned their attention to the consolidation and strengthening of their hereditary domains. They became less and less Germanic in outlook, and the fact that they ruled over so many non-Teutonic peoples, such as the Slavs of Bohemia and the Magyars of Hungary, effectually prevented them from taking a part in the movement towards German national unity.

Thus was the way paved for the further expansion of Brandenburg (Prussia) and therewith of the rise to greater power of the Hohenzollerns.

5. THE RISE OF PRUSSIA

The accession of the Great Elector (1640), some eight years before the close of the Thirty Years' War, was the real beginning of the rise of Prussia. The war also marked the decline of Austria and the towns of the Hanseatic League: so the time was ripe for Prussian development. Up til this time Austria had overshadowed Prussia, and the confederation of the Hanse towns had tended to develop at the expense of the Northern Plain. The Elector realised that the Baltic was beginning to decline in importance and that the future lay with the North Sea. As an example of his foresight one may instance the construction of the Friedrich-Wilhelms Canal

which, by joining the Oder to the Spree-Elbe system, united it with the Elbe and the North Sea. The Elector strengthened his territories to the west by acquiring the bishopric of Magdeburg, on the Elbe ; Halberstadt, near the southern foot of the Harz ; and Minden on the Weser. At the same time he acquired a foothold on the Baltic coast by obtaining Eastern Pomerania, and on the North Sea by the acquisition of East Friesland, which gave him control of the mouth of the River Ems. Thus was the beginning laid for the gradual expansion and consolidation of Prussian power.

The Elector Friedrich, who succeeded him, assumed the title of King of Prussia, and his son Friedrich Wilhelm I obtained in 1720 the port of Stettin, the island of Usedom, and the outport of Swinemünde, from Sweden, and also added further territories along the Baltic seaboard by acquiring West Pomerania, which gave him entire control of the lower portion of the Oder.

The Prussian Army was the creation of Friedrich Wilhelm I. His work in this direction is, however, sometimes apt to be minimised because the king was an eccentric, whose great passion was his corps of giant grenadiers for the recruiting of which he scoured not only Germany but Europe.

When Friedrich the Great, the eccentric son of an eccentric father, mounted the throne he found a splendidly trained army and a well filled treasury. With these he set himself the task of making his name as a military conqueror, and increasing and linking up his scattered domains.

By seizing Silesia he secured control of the Upper Oder Valley—a region which was the natural continuation of the Northern Plain—and thus thrust a wedge between the two Catholic states of Saxony and Poland. Later the

weakness of the latter state provided him with another opportunity of increasing his power and by the First Partition of Poland (1722) he was able to unite Eastern Pomerania with East Prussia.

The Second and Third Partitions of Poland gave his successor South and New East Prussia, and so completed the control of the Vistula and, at the same time, further consolidated Prussia, which extended from the Weser to the Niemen. The only other power of any importance now left in North Germany was Hanover. But by this time the French Revolution had broken out and all interest turned suddenly westwards.

6. THE GERMAN EMPIRE

The Revolutionary and Napoleonic Wars (1792-1815) formed an interlude in the real history of Germany. France under the Republic proved to be as aggressive as under the "ancien régime," and the wars began with a French occupation of the Austrian Netherlands and the attempt to occupy the Middle Rhine. Prussia and Austria fought on the same side for a common cause, but the old rivalry persisted, and Prussia signed a separate peace with France in order to turn her attention to Poland. After the defeat of the Austrians at Austerlitz, Friedrich Wilhelm III of Prussia made a final attempt to resist Napoleon. But the defeat of the Prussian army at Jena brought him to his knees and Napoleon entered Berlin in triumph. The next step of the conqueror was to form all the German states between the Rhine and the Elbe into the Confederation of the Rhine, regardless of the feelings of the independent states within its boundaries. Napoleon greatly reduced the number of states, and because of this he may, indeed, be regarded as one of the makers of modern Germany.

The final defeat of Napoleon at Waterloo was an epilogue that took place while the diplomatists at Vienna were attempting to resettle the map so arbitrarily changed by his career.

The Congress of Vienna practically re-established for Germany the old limits of the Holy Roman Empire as it had been in 1789, but the German Confederation was a weak imitation of the old imperial administration. It consisted of a Diet at which forty-one states were represented and whose president was Austrian. The period of reaction lasted until 1848, but the real history of Germany after the spectacular fall of Metternich in that year was the growth of German nationality and the exclusion by Prussia of the largely non-German Austria from the headship of the country.

Careful military and domestic reforms were made after the disaster of Jena, and Prussia, whose territories had been further increased in 1815 by the acquisition of Westphalia and Posen, was marked out as the natural leader of North Germany. The preliminary to uniting the German states outside Austria under her political control was the formation of a Customs Union, or *Zollverein*; internal tariffs between states were gradually removed, but external duties maintained the theory and practice of Protection, in the interests of all the states included in the Union. The extent to which this move increased the prestige of Prussia may be judged from the fact that in 1848, when the German National Assembly met, the Crown was offered to Friedrich Wilhelm IV. But he thought that the time had not yet come, and that any precipitate move on his part might prove disastrous, until Austria was finally discredited as a German power. History now regards his refusal as a blunder.

In 1866 Bismarck took up arms against Austria over the question of Schleswig-Holstein and inflicted a crushing defeat on the Austrians at Sadowa. This resulted in the final exclusion of Austria from the German Confederation, which was remodelled under the headship of Prussia. Schleswig-Holstein was annexed and Hanover, which had been allied to Austria in the war, passed under Prussian rule.

Prussia now cast her eyes to the west. The final step was taken in the Franco-Prussian War in 1870, which not only gave Alsace and Lorraine to Prussia, but also led to the declaration of the German Empire in the Hall of Mirrors at Versailles.

7. SOME EVENTS LEADING TO THE GREAT WAR

The crushing defeat of France, following upon that of Austria four years before, made Germany one of the most powerful nations in Europe. In France defeat clamoured aloud for "revenge." But for centuries France and Germany had been traditional enemies, and the aggressor had usually been France. When two nations in juxtaposition and without good natural frontiers are animated by antagonistic feelings, war, sooner or later, often proves inevitable.

In Germany the military caste became the predominant force in the state. Militarism became the national ideal—an ideal that permeated not only the army, the navy and the civil service, but also science, industry and commerce. It ran like a thread through the educational system; it formed a link uniting nursery to school, and school to university; and even the philosophic traditions handed down by Kant, Schopenhauer and Hegel were made to pay tribute to the great military machine. Efficiency and thoroughness became the Ger-

man motto, and this efficiency brought prosperity to the state ; its factories and workshops were models for the world ; its merchant ships sailed the seas and its naval craft carried the German flag on every ocean.

Germany knew that she was powerful and she felt the urgent necessity for expansion ; but she alone of all the great European countries had arrived too late in the world field. A great proportion of the undeveloped lands of the earth were ruled by other nations, and Germany hoped that, by commercial penetration, backed by diplomacy and supported by adequate land and sea forces, she might gain a greater share of colonial territories.

But though her efficiency was undoubted and her diplomacy, in some ways, successful, yet under the direction of Wilhelm II she managed to estrange her friends and to make fresh enemies. Her hostile attitude towards Britain in the Boer War (1899-1902) aroused suspicion in the latter country. The creation of a powerful German navy, in the early part of the twentieth century, added further to the ill-feeling between the two nations. It suggested to many people in Britain that the Germans intended to seize by force colonies denied them by their late entry on the world stage. How well these years of growing distrust had done their work is illustrated by the fact that when in 1870 Bismarck began to build a small navy his action was regarded with favour rather than disapproval by Britain. In 1904, the latter country, fearing isolation, entered into an *entente* with France, and three years later into one with Russia. The Anglo-Russian agreement over Persia (one of the objects of which was to secure to Britain control over the Persian oil-fields) was naturally looked upon with grave disfavour in Germany and only added to the growing European tension.

In 1908 Bosnia and Herzegovina were annexed by Austria ; and the Balkan Wars of 1912 and 1913, followed by the murder of the heir to the Austrian throne at Sarajevo, were the breezes that fanned into open flame the long smouldering fires of European jealousies and hatreds. Russia backed the cause of Serbia and Pan-Slavism, and the Austro-Serbian conflict developed into the Great War.

The War of 1914 may be regarded as the natural corollary of the Franco-Prussian conflict of 1870. By alliance with Turkey, Germany had hoped to establish a great consolidated Empire or commercial hegemony stretching from the North Sea to the Persian Gulf. The aged Emperor of Austria was himself favourable to an English alliance, but despite this fact his country was pressed into the German service by skilful diplomacy, which suggested for Austria the possibilities of a Balkan Empire.

The violation of Belgian neutrality, for which the Germans pleaded " military necessity," was the principal cause that forced Britain to adopt her traditional policy of defending the Netherlands, for she realised, as in past centuries, that in so doing she was primarily defending her own shores from foreign invasion. In the past, when struggles had been confined to the middle Rhine, Britain did not always interfere. When the scene shifted nearer home, to the North Sea, she generally stepped in.

The Peace Treaties of 1919 to 1921 were, in spite of certain inconsistencies, an attempt to recognise the principles of nationality and self-government in Central Europe. The vast Austria-Hungary of pre-war days has disappeared and its place has been taken by the Kingdom of Hungary (at present ruled by a Regent) and a series of independent republics whose boundaries show the

approximate limits of racial differences—differences that have their origin largely in geographical conditions. Thus Czechoslovakia includes the Slavonic peoples (hitherto ruled by Austria) in Bohemia and Moravia; Austria and Hungary have been separated as being respectively German and Magyar; the southern Slavs have been united to form Yugoslavia; and Slavonic Poland has had her independence restored.

Through the return of Alsace-Lorraine to France, Germany has lost an exceptionally rich iron-ore producing area. "The interdependence of the French iron manufacturers and the German coke producers has been one of the chief causes of a series of international agreements dealing chiefly with the iron and steel trades. By far the most important is the one in which Germany and France are the principals. The necessity of co-operation between these groups of industrialists should prove a powerful factor in the attainment of stability in a region which up till now has always been a bone of contention between French and German peoples."¹

The fact that Germany has become a member of the League of Nations should prove, in spite of strong national prejudices on the part of many of its members, an effective means for fostering international good-will both in the economic and the political spheres.

¹ Section on *France*, by J. H. Stenbridge, in *A Geography of Western Europe*, edited by Dr. E. D. Laborde.

CHAPTER XII

THE CITIES OF MEDIAEVAL GERMANY

1. EARLY TRADE ROUTES

ONCE Germany had emerged from the barbarian stage, she rapidly became one of the leaders of civilisation and one of the foremost trading powers of the Middle Ages; for she occupied a key position in mediæval Europe on the great south-east to north-west trans-continental route leading from the Mediterranean and the Far East to Western Europe and Northern Germany. Thus the cities of Southern and Central Germany, lying athwart this route, grew into important trading centres. At the same time the powerful Hanse towns stretching along the Baltic shores were forming themselves into one of the principal maritime powers of the world.

From early times there was south to north traffic down the Vistula, Oder and Elbe, but comparatively little from west to east, for the ancient valleys were as yet undrained and the great plain that stretched far away to the East was a sparsely peopled region, where Teutons were gradually replacing the Slavonic tribes who had advanced into its westerly areas.

From the time of the Greeks, and probably of the Phœnicians, merchants had visited Samland and the shores of the Kurisches and Frisches Haff to obtain amber, the fossilised gum furnished by the remains of trees of prehistoric forests. One important "Amber way" followed by these early traders led from the

Danube, across Silesia, to the Baltic coast. "Salt ways," such as are still traceable in parts of the British Isles, were also the forerunners of later traffic routes: one such way ran from Cracow and then down the Oder to Breslau; another passed from Halle along the foot of the Central Uplands to Bohemia; and a third, which was especially important from the twelfth century onwards, went from the Rhine to Munster, crossing the Weser at Minden, the Leine at Hanover and then, turning north, skirted the Luneburg Heath (the great repository for salt), and traversing the Elbe at Artlenburg, made for Lübeck, its northern terminus.

2. THE CITIES OF SOUTHERN AND CENTRAL GERMANY

In the Middle Ages, when traffic from India and the Far East was at its height, Constantinople was especially important. The city was the capital of a Christian Empire: it stood at the south-eastern gateway from Europe to Asia, at the junction of land and sea routes; and so it became a great entrepôt port, forwarding centre and market where the products of Europe were exchanged for those of Asia and whence vessels laden with cottons, muslins, silks, gold, silver and jewels travelled up the Mediterranean to Venice.

The latter port and, in a lesser degree, Genoa, were the distributing centres for such produce, and from these two cities the goods were dispatched, from the former town over the Brenner pass, and from the latter by way of Milan and the St. Gotthard, to the cities of Southern Germany.

Roads were poor, often mere tracks; bridges over the streams were few, and goods were conveyed mainly by pack horses. Consequently the principal routes were those with the fewest river crossings. A lengthy route,

with few such crossings, even though it meant climbing steep gradients, was preferred to a more direct one which involved the fording of a number of streams. The majority of the mediæval cities lay off the few main roads as distinct from the natural routes. The roads that linked them at a later period were due to the development of the rough tracks joining the villages and towns. Thus the German road system grew up in an haphazard manner and on no definite plan. Its lack of cohesion was indeed an important contributory cause in helping to perpetuate the many political divisions of the country.

The St. Gotthard route presented difficulties, for it involved an ascent of nearly 7,000 feet. Consequently Venice, commanding an easier route, was the principal port for trans-Alpine traffic.

The way from Venice to the Brenner climbed the valley of the Adige to Bozen, near the confluence of this stream with the Iscaro; it then ran up the latter valley, crossed the pass at the comparatively low height of 4,500 feet, and made an equally easy descent into the Inn Valley at Innsbruck. In the Middle Ages, owing to a landslide above Bozen, most of the traffic made a detour north of this town before rejoining the direct route.

From Innsbruck two ways were frequented; one ran by the Fern pass, to the west-north-west; the other, which was more used, climbed some 2,000 feet to the Seefeld pass and thence followed the Valley of the Lech to Augsburg, or continued west to the upper Iller Valley, which it descended to Ulm. A somewhat longer route went from Innsbruck, down the Inn Valley to Kufstein and Rosenheim, and then by way of Landshut on the Isar, once the capital of Lower Bavaria, to Regensburg.

Another way that was much used climbed the Etsch Valley from Bozen to Merano, reached the upper Inn by

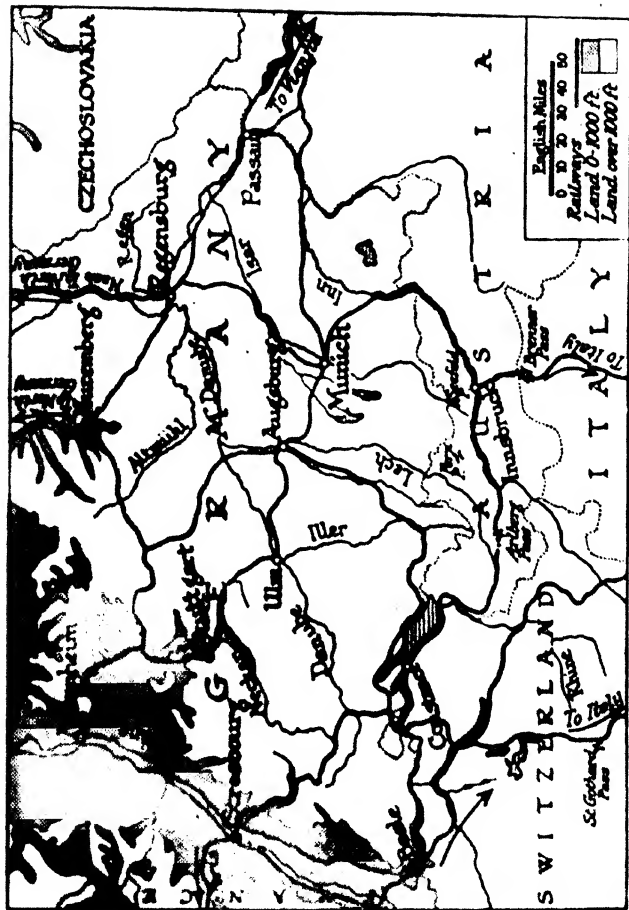


FIG 18.—ROUTES AND TOWNS OF SOUTHERN GERMANY

way of Reschenscheideck, thence making for the Fern Pass and Augsburg.

Some of these ways were important even before the Middle Ages, for the Romans constructed a military road over both the Brenner and Seefeld passes.

It is probable that many of the mediæval cities were definitely founded as administrative and commercial centres. Some undoubtedly took their name from a nearby village but they did not develop as a result of its natural growth. It seems doubtful if the idea of walled towns arose independently in different parts of the world, and it is much more likely that it was conveyed from one region to another.

Nodality and the nature of the surrounding country greatly influenced the choice of site. For instance, Frankfurt-on-Main not only commanded excellent routes but, owing to its position in the midst of an extremely fertile district, it was one of the foremost market towns in Germany. Its fairs became famous throughout Europe, ranking in importance with those of France and Flanders. An old saying well sums up the favourable nature of the country around the town: "The Wetterau is Frankfurt's granary, the Rheingau (to the west) its cellar, the Maingau (to the east) its timber and stone yard, and the Gerau (to the south) its kitchen garden."

At the risk of some repetition it may be well to mention briefly a few of the main routes converging on some of the chief cities of Southern and Central Germany.

Regensburg, standing at the point where the Danube swings farthest north, had an especially advantageous position. It commanded both the waterway and also the trans-Alpine route over the Brenner. Its river-borne trade extended down the Danube as far as the Hungarian Plain, but it is improbable that there was

any direct trade with the Black Sea ports and Constantinople. From Regensburg routes ran northwards up the Naab Valley, joining others leading to the Northern Plain; a second crossed north-west to Nürnberg, Frankfurt-on-Main and the Rhine; the third ran up the Regen Valley to Cham and thence to Bohemia.

Augsburg ranked after Nürnberg as the chief commercial centre of Southern and Central Germany. The northward way led down the Lech to the Danube: the westward one to Ulm. The merchants of the town, especially the patrician houses of Fugger and Welser, became world famous; their riches were enormous and the splendour of Augsburg was noted throughout Europe. The Fugger House, with its painted frescoes, and the Kesselmarket, with its old houses, still carry the mind of the traveller back into the past; and the Rathaus, with its golden hall, reminds one of the ancient glories of the city.¹

¹ As Germany has, until recent times, been essentially a union of small states, so in architecture the civic spirit prevails, and there are more beautiful cities than outstanding buildings. In all periods there has been a wide diversity of styles, largely caused by differences in the materials available for building and partly by local independence in politics, religion and language. Southern and Central Germany derived their architectural styles, no less than their prosperity, from the south. Romanesque marked the survival of Roman tradition after the fall of the Empire: Gothic, of which the cathedrals at Cologne and Strasbourg are noble examples, was imported from France, and later, civic architecture in the south was affected by the Renaissance. There has been no great movement in German architecture like the Renaissance in Italy or Gothic in France, though the Northern Plain may be said to provide a truly native type. Here, unlike the south, where wood and stone exist in abundance, there is almost no stone: buildings of any age are normally of brick, and there are many that are vigorous, picturesque and original, if not splendid, such as the Rathaus and the Marienkirche at Lübeck.

To-day, ease of transport and the wide use of materials like concrete make it harder to assign the origins of cultural movements to specific places. Northern Germany, by virtue of its commercial and industrial importance, possesses some of the most excellent

Ulm, at the confluence of the Danube and the Iller, was the most convenient place for trans-shipment for goods coming from the middle Danube and destined for the Rhine, which was reached overland by the Neckar Valley. An alternative route led from a point higher up the Danube, across an easy pass in the Black Forest, down the Kinzig Valley, to another point opposite Strasbourg.

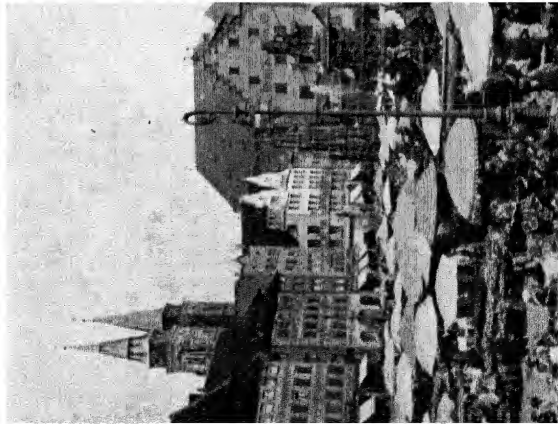
Routes from Augsburg and Regensburg ran to Nürnberg and thence west to the Rhine or north to the Plain and the Hanse towns.

Nürnberg was one of the leading commercial cities and the fame of its merchants and craftsmen was wide-spread. Its singers have been immortalized in Wagner's opera, "The Meistersingers of Nürnberg." In addition to its castle, walls and churches, there are still preserved there many splendid specimens of the domestic architecture in which the Middle Ages was so rich, and one is still able to picture, in some measure, the life of the mediæval city.

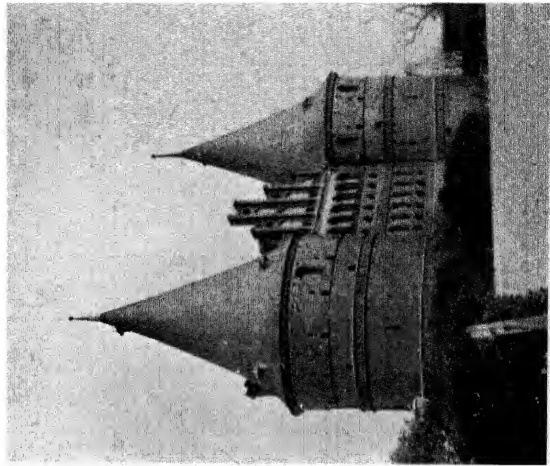
In the upper part of the Rift Valley the Roman towns of Speyer, Worms and Mainz were important both as administrative and trading centres. East to west routes crossed the Rhine here, and this portion of the valley itself was, and still is, one of the most favourable climatic and productive districts in Germany.

Though there were few easy crossing-places over the Rhine throughout the Rift Valley portion of its course, yet there was a considerable trans-Rhine traffic from the

examples of modern architecture, and in fact much of the credit for pioneering in this movement must be given to her architects, whose ideals of strict utility and absence of all ornament have given to cinemas, workmen's flats and multiple stores beauty which was formerly confined to churches, castles, town halls and private houses. Hamburg, Berlin and Frankfurt all possess excellent examples of these. (See Plate III, facing page 50.)



THE HAUPTMARKT AT NURNBERG



THE HOL-ENTOR AT LUBECK

A good example of a North German brick building.

towns of Southern Germany to those of France and Flanders where great markets and fairs were held throughout the year. From the Rift Valley the routes went west to the Paris Basin or continued north down the great natural highway to Cologne and Flanders.

The busy port of Cologne was then, as now, a meeting-place of land and waterways, but it was more than a commercial centre. Here at this time skilled craftsmen from all over Europe met to assist in the building of the great cathedral, which is one of the finest specimens of Gothic architecture in Europe (commenced about 1248 and finished in 1880); and distinguished visitors to the town were entertained by the City Fathers in the newly completed Gurzenich (1441 to 1452), which is still one of the gems of civic architecture.

3. THE NORTHERN PORTS

Of even more importance than the trade between southern Germany and western Europe was that between the former region and the Hanseatic ports of the Baltic. In addition to the trade with southern and central Germany, the Northern Plain provided a rich hinterland, and the Elbe, the Oder and the Vistula formed important routes into the interior. The Hanse towns also drew towards themselves much of the commerce of Flanders and Holland as well as that from the less developed countries of Poland and Russia. At these ports, merchants exchanged Flemish fabrics, German hardware, amber and Spanish wines for the furs and wax of the Russian forests, the hides and tallow of the pastures of the Vistula, the crude metals from the Swedish mines and the wool from the sheep bred on the English grasslands.

Most of the ports were situated on river estuaries, often some distance from the sea. They were usually built

on spurs of firm land running out into the alluvial deposits which fringed the coast. Thus, at Lübeck and Bremen, the older portions of the town stand on high ground, but the newer parts have extended over the lower ground and have been built on piles driven into the alluvium.

Lübeck, the head of the Hanse confederation, originally stood nearer the sea than it does at present. but because of frequent attacks by pirates it was finally rebuilt somewhat higher up the Trave. For three centuries the confederation dominated the trade of the Baltic and successfully resisted the efforts of Sweden and Denmark to obtain control of its waters. So great was the power of these towns that their ships held the entry to the Baltic Sea, exacting toll from foreign craft and even, on occasion, refusing the right of entry. Along the southern Baltic shores stretched the long line of Hanse ports, Kiel, Lübeck, Wismar, Rostock, Stralsund and Stettin; but Visby, on the island of Gothland, and the great fishing centre of Bergen in Norway, were also members of the League; its factories were to be found as far afield as Nijnii Novgorod, Bruges, Ghent and London, and in the latter city the Hanseatic merchants were the chief exporters of wool (staplers) among the foreign traders of the English capital. The river-ports of Cologne on the Rhine, Magdeburg on the Elbe, and Breslau on the Oder were all important collecting centres; and the north sea-ports of Hamburg and Bremen were also Hanse towns, but their importance lay rather with the future, for the balance of seaborne trade had not yet shifted to the Atlantic.

Until the early part of the fifteenth century herrings were plentiful along the Baltic coasts of Germany and the fish trade accounted for much of the prosperity of the Hanse ports. Salt from the Luneburg Heath was used

to preserve the fish which was in great demand in the Catholic countries of Europe.

The power of the League was further extended by its alliance with the Teutonic Knights, for whom it provided ships. Königsberg, the outlet for the Pregel Valley, was founded by the Order in 1255, and Danzig did not become important until its purchase by the Knights early in the fourteenth century.

The discovery of America, and the shifting of trade routes to the Atlantic during the later part of the fifteenth and the sixteenth centuries, dealt the first blow to the predominance of the Hanse towns. With the widening horizon, maritime power passed from Lübeck (and the other Baltic ports) to Hamburg and Bremen, and even farther westwards to Amsterdam and Bristol.

The establishment of the Turks at Constantinople, and the finding of the sea-way to India, affected very adversely the whole commerce of Germany, but especially that of the South German towns; for now, instead of lying on one of the great world trade routes, they were left in an economic backwater. The disastrous Thirty Years' War (1618-1648) marked the final decline of both the latter towns and the ports of the Hanseatic League—a blow from which they have never wholly recovered.

CHAPTER XIII

LANGUAGE

THE area of German speech extends far beyond the present confines of the State. It stretches from the Rhine Valley and the middle Moselle on the west, to the Niemen on the east, and from the shores of the Baltic southwards to the upper Drave. There are, in addition to this Austro-German block, Teutonic-speaking districts in a considerable portion of Switzerland, in Hungary, Rumania, Jugoslavia, South Russia and Czechoslovakia ; and in the last-mentioned state peoples speaking the German tongue inhabit both sides of the Bohemian Forest Range, the Erz Gebirge and the Sudetes. In addition Norwegian, Swedish and Danish form a sub-division of the Teutonic group, and Dutch and Flemish are also kindred tongues.

The Romance language has not crossed the Rhine, though it very nearly approaches it in the neighbourhood of the Burgundian Gate and beyond the wooded heights of the Vosges which form, in the main, a linguistic boundary. On the other hand, Teutonic speech has travelled up the Rhine and its tributaries ; thus the peoples in the valley of the Moselle and the Saar basins, as well as Luxembourg, are German-speaking, as are those in the Ill Valley in Alsace and along the Aar and the upper Rhine regions in Switzerland. In Austria, Teutonic speech is prevalent not only in the Inn Valley, but it has also filtered through the Brenner Pass to the Adige, where

there are, north of Vicenza, the German settlements of *Tredici* and *Sette Comuni*, and here German customs and language still persist, despite opposition. In the Morava Valley many of the peoples are German both in speech and sentiment.

On the eastern frontier of Germany there are "islands" of Polish-speaking folk in German territory, and there is an even larger number of Teutonic-speaking "islands" in Poland; in few cases do the linguistic and political boundaries coincide.

The original home of the Teutonic tongue seems to have been in that part of the European plain which lies between the Elbe and the Rhine, where it superseded Celtic; for in the Bronze Age, before the coming of the Teutonic tribes, this region was inhabited by Celtic peoples.

At the height of her supremacy Rome extended her boundaries beyond the Rhine and the Danube, yet the Classical-Romance group was never established east of the Rhine, and in historical times this has always been an area of Teutonic speech. With the decline of the imperial power, the Romans were driven out of the south-west of Germany and the Teutonic Franks established themselves in the valley of the middle Rhine and the Main. Others invaded the Paris Basin, became Christians and, though they vanquished the Gauls, adopted the Romance language, which, modified by this Teutonic influence, ultimately became the *langue d'oïl*, the "French" language.

The Roman tradition survived the onslaught of the barbarian tribes, for its mantle fell upon the Church, whose influence spread throughout southern and later through northern Germany, though it was naturally stronger in the former region. So in southern Germany the Teutonic tongue was modified and enriched by

additions from the Classical-Romance group, but in the north this influence was not so great. The language of southern Germany ultimately became High German and that spoken in the north developed into Low German ; in the region between these two groups a Middle German dialect came into being. There were, however, in addition to these two main groups, many other local dialects. In the fourteenth and fifteenth centuries a series of phonetic changes took place in most of the dialects then spoken in Germany, though the extent of these changes varied greatly with the different dialects. "Certain long vowels became diphthongs, certain diphthongs became long vowels, certain short vowels became long." Thus individual development and diversity tended to become pronounced, and it was only the advent of Luther and his Bible that unified and established a common tongue. The invention of printing assisted the spread of this standardized language.

It was in the Franconian dialect, a cross between Low and High German, that Martin Luther translated the Bible ; for by the use of this dialect he made his work intelligible both to the High-German and the Low-German-speaking peoples. Apart from the merits of the religious questions involved, Luther performed a great linguistic service to his country : his translation of the Bible, over which he took incredible pains, was perhaps the great reformer's finest literary work. His aim was to make the Bible understood by the "common man in the market," and he succeeded so well that his Bible is still the standard of the German tongue, and through it has been preserved to the German people unity both of language and literature. From his time onwards the importance of the local dialects steadily declined, but the German language as a whole was enriched by their influence.

Along the North Sea coast, including the west coast of Southern Schleswig, the Frisians (for so long isolated by marsh and moor) have retained an Anglo-Frisian dialect, in which many words, such as *dat* and *water* are not only pronounced in a similar manner, but are almost identical with the English words *that* and *water*.

As already mentioned, there is a considerable mixture of Teutonic and Polish (Slavonic) groups along the German-Polish frontier, but around Kottbus, on the Upper Spree, there survives a distinctly Slavonic district which is inhabited by a colony of Wends who are supposed originally to have descended the valley of this river from Bohemia.

On the other hand, East Prussia remains as a Teutonic region in the midst of a Slavonic area. This, now detached, portion of the Empire was colonised by the Teutonic Knights in the thirteenth century, and so a people of Slavonic speech became wholly Germanised in outlook and partly so in language. Along the coast they adopted the Teutonic tongue, but in the more isolated region of the Masurian Lakes they retained their native speech, which they still use at the present time. But though they speak Polish, their sympathies are German and their religion Protestant: thus after the Great War they preferred to remain a part of Germany rather than be incorporated with the Slavonic peoples of Catholic Poland.

CHAPTER XIV

LITERATURE AND THE LAND

IF there is any truth in the idea that the mind of man is influenced by its environment, the literature of a country cannot fail to be affected by geographical conditions. The nature myths, which form one of the earliest manifestations of literature, are direct reflections of the mental impressions produced by the succession of winter and summer, the alternation of night and day, by volcanic eruptions, floods and other natural phenomena. Man's psychological outlook cannot but be touched by a climate of unending gloom or persistent sunshine, by the circumstances of easy life on smiling plains, or by the hardships imposed through the rigours of climate or the inequalities of the land surface.

Among the conditions which work most profoundly on man's faculties, varied relief in the topography which surrounds him is a factor potent in stirring his imagination. No one who has wandered through the Highlands of Scotland, the Black Forest or the Alps has escaped a thrill at the sight of the beauties of Nature; and the English Lake District has inspired a whole school of poetry. In such surroundings poetic themes are ready-to-hand. The mists that enshroud the heights, giving a mysterious life to the weird-shaped rocks; the distance which impels the imagination to eke out the powers of sight; the wide horizons which bound the mountain view and lay the kingdoms of the earth at the watcher's

feet—these are things which cannot but reflect themselves in the human mind which contemplates them.

But Nature's greatest wonders seem to overwhelm the mind and paralyse its powers of expression. Hence, it is not the snow-clad peaks of the Alps that have stirred the poets to song, but the quieter features of the gloomy forest, the dark and beetling crag, and the wall-locked gorge. Perhaps the reason must be sought in man's inability to throng the scenes of Nature's greatest effects and in the consequent lack of an atmosphere of sympathy and encouragement which starves the production of literature, art, and music.

No surprise is felt, therefore, at the fact that the cultural arts of Germany have been concentrated in the south-west and south. Here the word "Germany" is being employed in a sense wider than the modern political use, so as to include lands—within and without the Reich—in which German is or has been the literary medium. Thus, Austria, German-speaking Switzerland and, as far as necessary, Alsace and Lorraine, are included. Indeed, not a little of German literature has been produced at Zürich, Vienna and Strasbourg, the "wunderschöne Stadt" of the poem.¹ By South Germany is meant, therefore, the Rhineland as far north as Cologne and all the German-speaking lands south of the 600-foot contour or whatever convenient line may be regarded as forming the southern boundary of the North German Plain. It largely excludes Czech-speaking Bohemia, which has naturally not been fertile in German literature.

It is in this south-western area as so defined that are found the most favourable conditions which Germany can provide for literary production. In the smiling valleys

¹The well-known popular eighteenth century song, "O Strasbourg," by an anonymous author.

of the Middle Rhine and its right bank tributaries and of the Upper Danube, the art of literature has found itself in accord with the varied, if scarcely imposing, manifestations of Nature. There Frankfurt, Nürnberg and Stuttgart have proved veritable foci of literary genius,

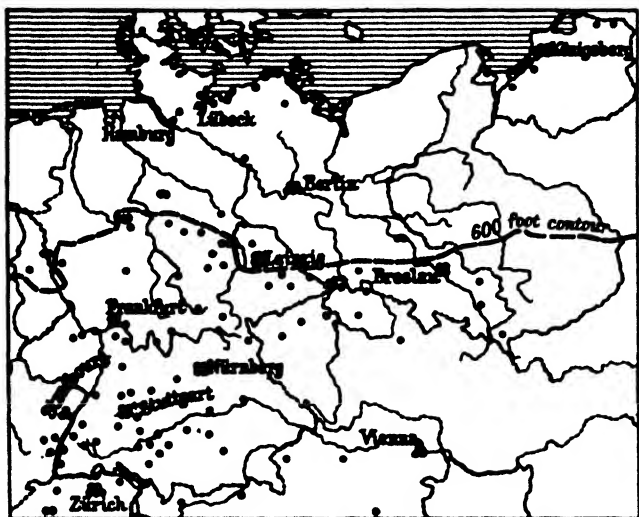


FIG. 16—DISTRIBUTION OF THE BIRTHPLACES OF LEADING GERMAN MEN OF LETTERS

and between them have given birth to eleven of the most famous German writers.

To illustrate the distribution of literature in the German-speaking areas, the accompanying map has been prepared, in which are plotted by means of dots the positions of the birthplaces of the leading German men of letters. This method of showing the distribution of native talent, though it may not always demonstrate the effect of environment in cases where the writers grew up in places

some distance from their birthplaces, nevertheless appears to be a sound basis for argument, since in the Middle Ages and indeed until far more recently, literary men did not often leave their native districts until their characters had been formed and their natural abilities had shown some promise. It would perhaps give less good results if applied solely to modern times, owing to the ease with which men transfer their homes nowadays from one country to another.

For the preparation of the map, 150 authors of imaginative works have been chosen as the most prominent figures on the authority of a standard history of German literature. When their birthplaces are plotted on the map, a most striking concentration of literary talent is indicated in the south-west, no fewer than 110 (or 73 per cent.) of the writers having been born in that area. This cannot be accidental.

Furthermore, the south-west is indeed not only the nurse of men of letters, but also the home of the great themes of German literature. The oldest poem in the language, the *Hildebrandslied*, and the greatest monument of Middle High German literature, the *Nibelungenlied*, both of which go back for their plots to the age of the Wandering of the Nations, are connected with the Rhine valley.

That district, known to-day as a beauty-spot and a tourist resort, seems to have had a special genius for creating legends. There is the great river itself with its winding streams now flowing sluggishly along a broad reach, now swirling through the Bingerloch; now fringed with green pastures, now walled in by its rocky gorge. Every mile of its course from Mainz to Bonn, is marked by some legend-bearing feature. Here rises the Lorelei, that frowning rock whose story inspired Heinrich Heine.

Who but one who had seen Nature's original could have penned the magic lines ?—

Die Luft ist kühl, und es dunkelt,
Und ruhig fließt der Rhein ;
Der Gipfel des Berges funkelt
Im Abendsonnenschein.

At the entrance to the gorge the waters are parted by the rock which bears the Mouse Tower connected with the old tale of Bishop Hatto. At the lower end stands the "castled crag of Drachenfels," known to all readers of Byron. Between the two are the towers of the Hostile Brothers, of the Cat and the Mouse, and many another ruin of what were once the lairs of robber barons, but now made picturesque by the mists of time and neighbourhood. But these legendary spots are not confined to the Rhine alone. The Black Forest and the other neighbouring uplands were the scene of the deeds of Herzog Ernst, that German Robin Hood, and of the legends of Tannhäuser and Faust, to name only a few of the best known tales which have been enshrined in literature.

What is the cause of the crowding of writers' birthplaces in South Germany and of their relative poverty in the North German Plain ? Doubtless, the broken land forms, the stretches of woodland and forest, and the streams of the south must have played their part, though other factors were at work too. The map showing the distribution of writers' birthplaces evinces clearly the fact that German literature has been largely peripheral, and this suggests the influence of external forces on the accessible margins of Germany. From earliest times culture has reached Germany from the south and south-west. The breaks and passes through the great Alpine ridge have

guided it through the Swiss plateau and Austria, and across Alsace and Lorraine.

The main centre of dispersion through Switzerland was German-speaking Zürich, a city which was not separated from Swabia by national barriers until comparatively recently, and which was indeed one of the chief cultural foci of mediaeval Germany. Berne also produced writers whose work must find a place in any history of German literature. From these towns ideas penetrated easily and naturally into Swabia and Franconia, and the close connection and sympathy between Switzerland and Germany is fully illustrated in the history of the Reformation.

The stream of cultural influences through Austria has moved, in the absence of any real physical obstacle, towards Bavaria, on the one hand, and Bohemia and Saxony on the other. This influence has been no less markedly productive of music than of literature, and it is surprising how many of the great "German" composers and musicians have been southerners. Mozart and Schubert were Viennese, Richard Strauss was a Bavarian, though his son Johann was born in Vienna; Wagner was a Saxon, as was also Schumann; J. S. Bach, who was born at Eisenach, was, like the rest of his family, a Thuringian; Dussek and Schulhoff were Bohemians; Franz Liszt, a Hungarian; Offenbach, like Franco, the first German composer of note, came from Cologne, while Beethoven's birthplace was at Bonn. A map constructed on the lines of that on page 144 shows a strikingly similar distribution of musical talent, though in this case Bohemia and Hungary do not remain waste spaces. It is noteworthy, too, that Albrecht Dürer, the great representative of German painting, was born at Nürnberg, though this art as well as sculpture has too few great names in

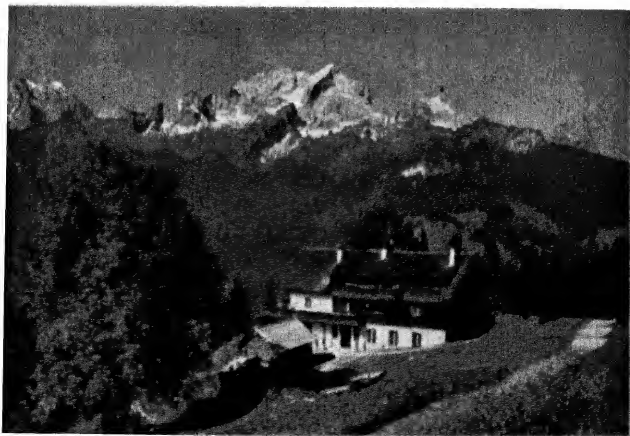
Germany to warrant a generalisation based solely on their distribution.

Farther north, the ill-defined Rhine frontier has brought the Rhineland into close touch with France. The political difficulties involved in Alsace and Lorraine merely reflect the transitional nature of the zone where Latin culture meets the Teutonic and where there is by the fusion of races a vast clearing-house through which ideas are exchanged. French influence has shown itself mainly in literature, and for the most part it percolated through the south-west, bringing the inspiration of the troubadours to produce the Minnesingers of the Middle Ages, and introducing the work of Latin and French fable-writers, and the *chansons de geste*. The Crusades markedly increased the power of foreign influence, and especially that of France, for German knights returned from those expeditions with a stock of French poetic themes, literary ideas and a knowledge of French refinements of verse. In modern times Gallic influence has been less spontaneous, and the efforts of German sovereigns to raise the standard of native culture by importing French writers has tended to obscure the old geographical relations.

But topography and position relative to foreign centres of culture have not been the only causes of the crowding of the birthplaces of the great writers in the south and south-west. Ripley the ethnologist has shown that the physical characteristics of the Alpine race now predominate in the uplands of South Germany, and, if this is so, allowance must be made for the influence of Celtic imagination. It is not without significance that the Arthurian legend, that great product of the Celtic mind, was welcomed in the south-west and that the German versions of *Parzival* and *Erec der Wunderaere* were produced there. The musical tendency of the South Germans may have a



BOOTETAL IN THE HARZ MOUNTAINS



A FARMHOUSE IN THE BAVARIAN ALPS

racial cause at bottom, though the forests which provided wood and the climate which kept folk indoors during the long winter evenings were also geographical factors that have helped to make Bohemia and the Black Forest famous for their musical instruments and South Germany as a whole—using that term in its widest sense—celebrated throughout the world for its orchestral music.

The relative void of the birthplaces of literary men in the North German Plain, which makes itself so evident on the map, is no doubt the outcome of several causes, some of which may not be geographical. One of these latter is perhaps the fact that during a part of the Middle Ages Slavonic peoples occupied the Plain as far west as the Elbe; but even this factor has its geographical element, in that the general relief of the land rendered the western penetration of these peoples an easy matter. Foreign occupation has, however, nothing to do with the area west of the Weser, where lack of literary talent must be attributed, at least in part, to the marshy, uninspiring nature of the land. Pomerania also has nothing likely to cause an outburst of poetry, though it may give birth to writers on philosophy and military tactics.

A further glance at the distribution of the birthplaces of the great German writers shows that the Baltic coast has not been barren of literary effort. Here, again, the peripheral arrangement of birthplaces suggests external influence, and this is confirmed by the grouping around the Hanseatic seaports of Königsberg, Hamburg, and Lübeck. A corresponding, though slighter, grouping of musicians may be observed in the Hanseatic towns, where Mendelssohn, Brahms and Buxtehude are the most prominent names. Significantly enough, the last was born at Helsingör, in Denmark, but rose to fame in Lübeck. The Scandinavian ideas which entered, with others, through

these centres of mediæval culture, and which were responsible for the introduction of the early poem of *Kudrun*, were no doubt increased by the Swedish occupation of much of the coastline of North Germany in the seventeenth century. Naturally, the literature of this region differed from that of South Germany in both themes and treatment. Less imagination and greater seriousness, and even melancholy, are noticeable in the Baltic writers, and it is remarkable that these include few of the select body of German men of letters who have achieved world-wide fame. This observation does not apply to writers on philosophy, economics, or the natural sciences, since no causal relations between these branches of study and geography has been discovered.

Density of population seems to be another factor in the distribution of literary production. This factor is itself dependent, however, on other basic geographical influences, such as relief, soil, and climate. The North German Plain, with its poorness of soil, its sandy wastes and its morainic deposits has, even under improved modern conditions, been unable to support as large a population to the square mile as can the uplands of South Germany, and until comparatively recent times its people have consisted largely of a scattered peasantry. Apart from its seaports and its modern industrial towns in the Ruhr basin, it contains relatively few towns of any size, and in this connection it must not be forgotten that Berlin is of modern and, in a sense, artificial growth. Of the five writers whom our map shows to have been born in that city, the earliest lived in the late eighteenth century.

South Germany, on the other hand, not only has a far denser population, but also contains numerous large towns. Apart from the Baltic seaports and the Ruhr towns—which must fairly be left out of account here—Germany

has fifteen towns with a population of over 100,000. Of these, three are in North, and no fewer than twelve in South, Germany. Many of the latter, together with several of the smaller places, like Dresden, Heidelberg, and Karlsruhe, have long been well-known cultural centres. Munich and Leipzig, which is only just north of the 600-foot contour, are famous for their ancient universities, while the Mecca of German music is Bayreuth, in Bavaria. The great influence exercised on literary production by urban foci is emphasised by the map showing the distribution of writers' birthplaces, which also gives special prominence to Frankfurt, Nürnberg, Breslau and Stuttgart.

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